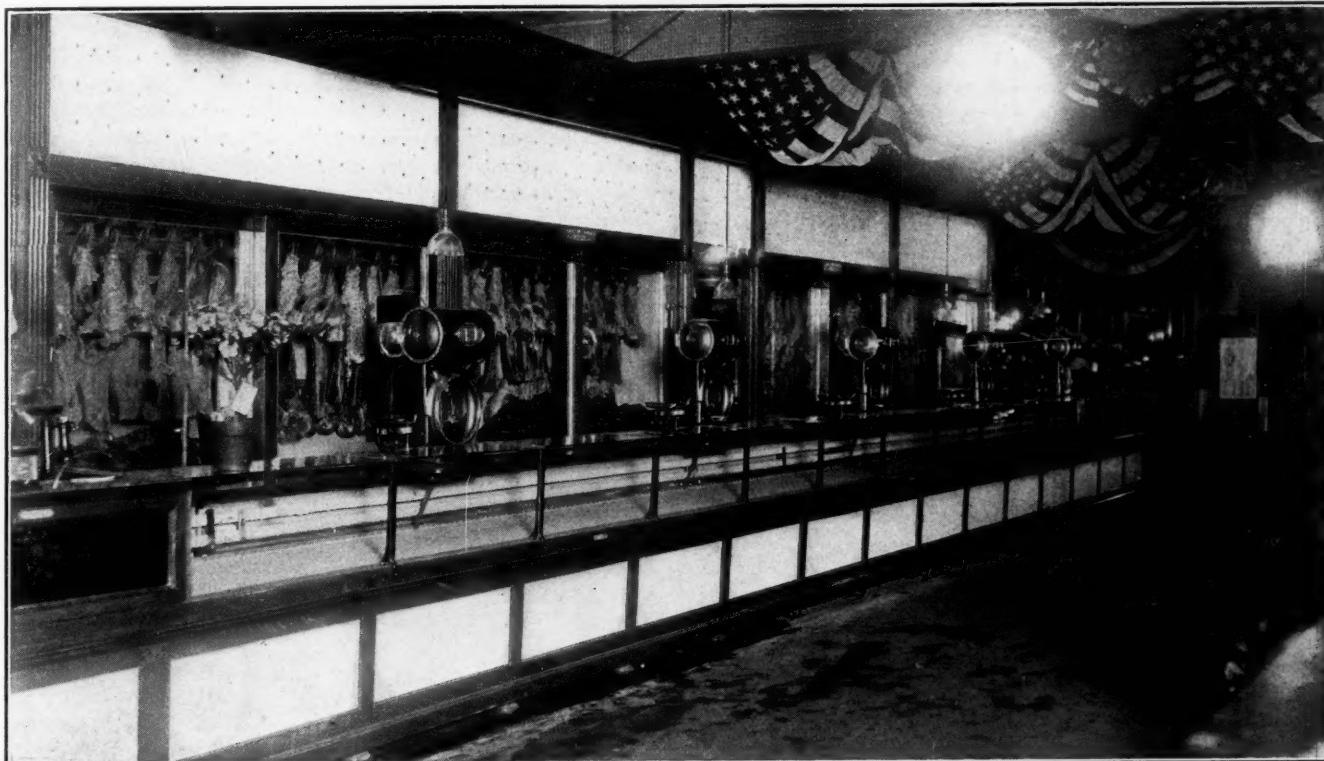


Municipal Journal And Engineer

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NEW YORK, MAY 25, 1910

No. 21



INTERIOR OF WASHINGTON MARKET, NEWARK

WASHINGTON MARKET, NEWARK, N. J.

Public Market Provided With Modern Conveniences—Floors Well Drained—Show Cases as Well as Refrigerators Cooled by Ammonia Refrigerating Machine—Cold Storage in Basement

THE Washington market, Newark, N. J., is a private enterprise promoted by the Metropolitan Realty Company, of which Edward Blaw is the president and Leopold Jay treasurer, as lessees of a building which was remodeled to suit the purpose. The old walls and partitions and iron pillars were removed so as to leave a clear space 150 feet long and 30 feet wide on the ground floor. The upper floors of the building are used for various business purposes. The basement is a part of the market, being used for the refrigerating machinery, refrigerators and storage. The building faces Market street near the center of the city and extends through to a narrow street in the rear by which most of the shipments of goods are received and sent out; an open space at this end about 40 feet deep serving as a turning space and standing room for vehicles. Through the center of the building an asphalt walk was laid 14 feet wide with a 4-inch crown. Along both sides of this are asphalt gutters draining into traps about 30 feet apart.

The asphalt floor is extended to the wall of the market on either side, sloping toward the gutter at a grade of $\frac{1}{2}$ -inch to the foot. This arrangement makes it possible to wash the entire floor thoroughly at any time. Asphalt was chosen instead of cement because being a non-conductor of heat it does not chill the attendants' feet in winter. The ceiling is of pressed metal.

The space each side of the central walk is divided into stalls 8 feet square each; most dealers, however, occupying more than one stall. The show cases and stands are placed on the line of the gutters. Against the walls are cases for the storage and display of goods as well as little offices for cashiers and bookkeepers. The market men stand in a comparatively narrow space between the counters and the vertical cases. The showcases, refrigerators and other equipment were supplied by the individual market men of such styles as suit their own needs. In general it may be said that they are all high-class

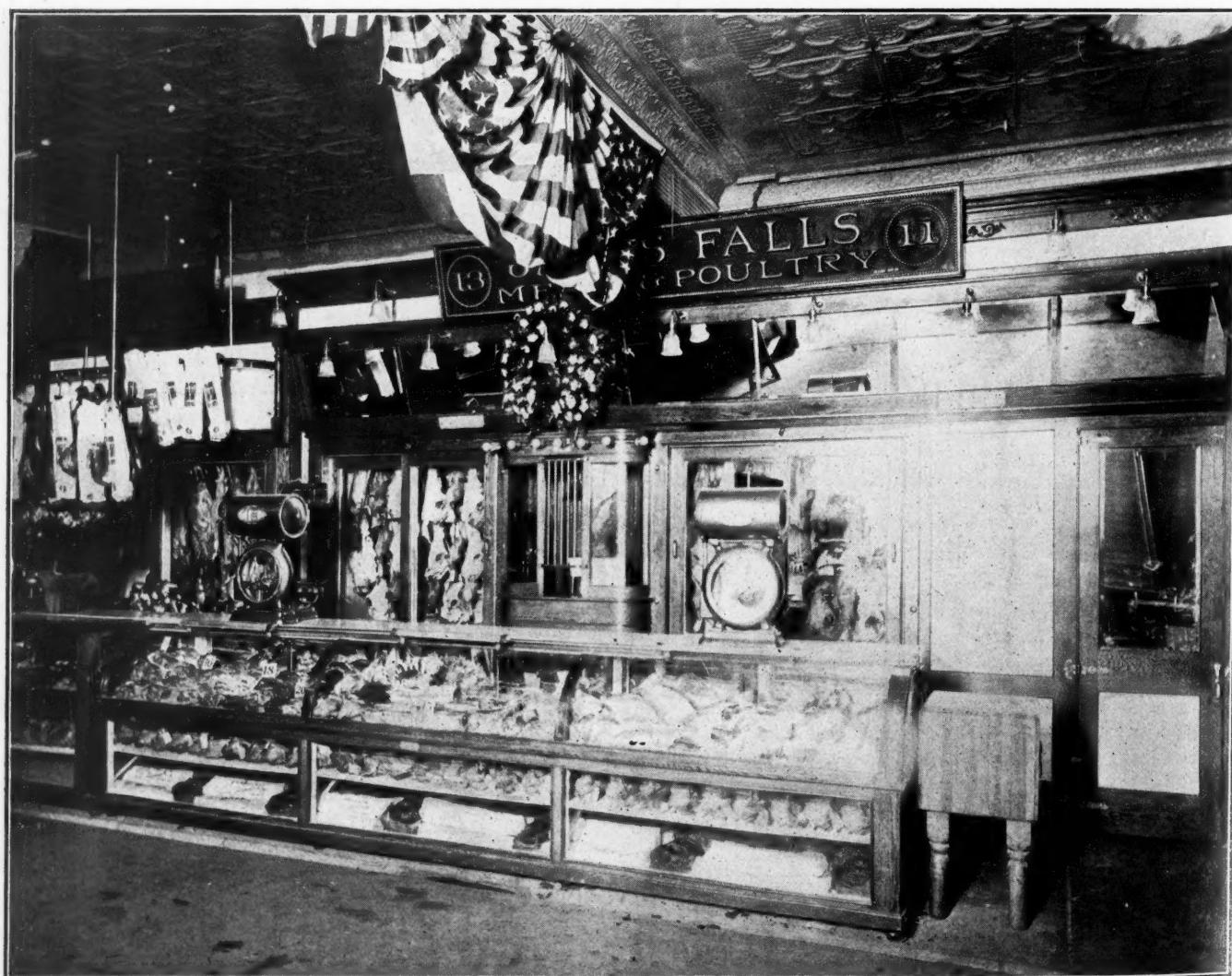
furnishings, both sanitary and handsome in appearance. The showcases, as a rule, have glass fronts of various styles, some of them plate glass tops. Refrigerating pipes run through all of the counter cases and wall cases, all of which have enameled tile fronts. The general use of glass, tile and burnished metal shining in the electric light gives the market a remarkably striking and attractive appearance.

The building is open in front and rear at night as well as in the daytime. The McCabe patent folding glass doors, each 2 feet 6 inches wide, are used in front of the market, which remain folded against both sides of the front, leaving the market entirely open at all times, with the exception of stormy weather, when two double swinging doors are used for entrance to the market, the folding doors closing up on both sides and leaving the two double-action doors in the center. In the rear of the building a large exhaust fan will be put in and air for ventilation drawn through the whole length of the building. Over the entrance prismatic glasses have been put in to deflect the daylight as far as possible into the building. Electricity, however, is used extensively for illumination. In addition to the liberal use of incandescent lights, Linolites have been placed in front of the counters illuminating the goods on display and creating a very pleasing effect. Refrigerating pipes have been run through the showcases and wherever desired by the individual market men.

The mechanical equipment located in the basement is quite extensive. A 15-ton refrigerating machine, made by the Brunswick Refrigerating Company, New Brunswick, N. J., has been put in, which supplies all the refrigeration for the market, no ice being used. This plant was designed for day-time operation only. The various boxes are cooled by means of the following

cycle: The ammonia is expanded through double pipe brine coolers in the brine tank, which contains a solution of calcium chloride. After the ammonia is expanded, or, more accurately expressed, vaporized in the brine coolers, the compressor draws this vaporized gas into the cylinder and compresses it to the critical point at which it will again liquify when cooled. Then the ammonia is passed into the ammonia condenser, which is of the double pipe type, the ammonia flowing through one pipe and water through the other. In the condenser the ammonia is liquified and then passed into a receiver, when it is again ready for expansion in the brine coolers. Between the compressor and the ammonia condenser is an oil interceptor which removes from the ammonia any oil it may have picked up in the compressor cylinder, this oil being necessary in the cylinder for lubricating purposes. The ammonia is used over and over again, a recharge being required about once in 12 months. The ice machine is operated by a 35 horsepower Crocker-Wheeler motor using a 500-volt direct current supplied by the Public Service Corporation. A General Electric 10-horsepower motor and direct-current generator stepping the current down from 500 to 110 volts supplies the current for lighting. A 2-inch centrifugal pump driven by a 3-horsepower Crocker-Wheeler motor forces the cold brine at a pressure of about 40 pounds per square inch from the refrigerating machine through about 1,500 feet of pipes, beginning with 2-inch diameter and reduced successively to 1½, 1¼ and 1-inch pipes, according to location and work to be performed.

The floor of the basement is paved with cement and contains the refrigerators of the individual proprietors of the stands. The refrigerators are constructed on the dry system so that no part of the food compartments is colder than air



WASHINGTON MARKET, SHOWING ALL-GLASS SHOW CASE

circulating through it. This prevents the condensation which occurs when warm air comes in contact with a cold surface. Access for goods is given to these refrigerators by a system of overhead tracks leading from the rear of the market. A large elevator lowers the goods, principally meat, from the surface to the basement, where it is suspended by hooks from a carriage traveling on the tracks, and is run to an Osgood scale, where it is weighed; then, by adjusting switches, it is transferred into the refrigerator where it belongs. There is one large refrigerator, called a freezer, maintained at a very low temperature, used in common for goods intended to be stored for a long time. Other individual refrigerators have large floor space and ample stands for cutting up meat. From these it is carried to the stands above, either by small spiral staircases or by means of dumbwaiters.

A large amount of water is used in connection with the refrigerating machine for cooling the ammonia pipes and for general purposes throughout the market. To save excessive water rates a 6-inch well has been sunk in the open space back of the market and at a depth of 246 feet a sufficient supply of water was found. For delivering goods sold, modern methods are employed and a number of automobiles are maintained cooperatively. This enables the dealer to deliver goods promptly at moderate expense at any part of the city and even to surrounding towns. A telephone system with extensions to each stand gives the best facilities for receiving orders. The entire plant was remodeled, built and leased by Edward Blau, the president of the company, who conceived the plan and carried it to a successful execution.

CITY FORESTER FOR HARTFORD

THE Street Department of Hartford, Conn., is hoping to arrange to have Mr. George A. Parker, Superintendent of Parks, appointed forester to work in conjunction with the City Engineer in supervising the city's trees and in the planting of new trees. One of the first requests made of Mr. Parker will be his advice as to the best location for a nursery, it being the desire of the Street Department to conduct a nursery from which can be obtained, within a few years, all the trees necessary for planting along city streets. His advice will also be asked as to what species of trees to use, and the best location on the streets. In connection with the work of providing fertilizer it is probable that a recommendation made by Mr. Parker, and referred to by us in our issue of December 15, 1909, will at once be adopted; this being for an interchange of by-products of the departments. City Engineer Ford proposes the use of street sweepings for fertilizing purposes instead of hauling them long distances and depositing them on city dumps. Mr. Parker has stated that when properly treated with alkali and composted these sweepings make valuable fertilizer and it is planned to haul them to the various parks nearest to their point of collection and there compost them.

DETAILS OF WATER SOFTENING AND FILTRATION AT MCKEESPORT, PA.

From February, 1909, to February, 1910, Inclusive. Averages by Months.

MONTH	CHARACTER OF WATER AND AMOUNT USED						TREATMENT OF WATER				COST OF TREATMENT				
	Alkalinity, Parts per Million		Hardness, Parts per Million		Million Gals. Filt. Water Pumped	Wash Water	POUNDS PER MILLION GALLONS				Chemicals	Labor	Total per Million Gallons		
	Raw	Filtered	Raw	Filtered			Hrs. bet. Washing Filters	Per Cent of Filt. Water	Lime	Soda Ash	Coagulant	Hypo-chlorite of Lime			
1909															
February	+0.6	42	59	49	3,631	291	0.43		213	544	191		\$7.35	\$9.44	\$16.79
March	-17	46	90	68	3,582	294	0.48		559	960	122		12.45	8.46	20.91
April	-3	27	73	55	3,638	173	0.70		584	478	197		8.15	8.41	16.56
May	-37	30	171	77	3,850	168	0.77		1178	1065	85*		15.67	8.03	23.70
June	-19	31	96	54	4,006	104	0.78		1196	615	111*		8.32	7.78	16.10
July	-71	33	201	77	4,345	75	0.96		966	1682	12*		17.26	7.21	24.47
August	-42	35	183	83	4,545	62	1.32		953	1382	76*		16.78	6.78	23.56
September	-39	27	153	80	4,039	58	1.28		821	975			12.16	7.58	19.74
October	-75	31	189	78	3,578	153	0.81		1074	1664	17*		19.57	8.53	28.10
November	-36	36	147	52	3,459	179	0.45		718	1416	21*	6*	16.10	8.91	25.01
December	-28	30	142	55	3,956	193	0.45		764	1129	15*	2*	13.62	7.89	21.51
1910															
January	-12	29	106	53	4,264	163	0.46		424	720	91	4*	8.86	7.34	16.20
February	-33	30	140	56	4,050	145	0.52		659	1043		4	12.35	7.71	20.06
Averages	-33	32.5	139	66	3,928	152	0.72		750	1046	76	4	13.36	8.05	21.41

* Used a part of the time only.

WATER SOFTENING AT MCKEESPORT

Unusual Hardness and Acidity To Be Overcome—Novel Features—Results Obtained—Amount and Cost of Chemicals Used—1,400 Tons Per Year

THE McKeesport, Pa., water softening and filtering plant was described, while under construction, in our issue of about two years ago. It was put into service, while still incomplete, in October, 1908, because of the urgent demand for some amelioration of the condition of the water, which was unusually bad—worse than it has been at any time since. Mine drainage, spent acids from galvanizing works and washings from coke beds added a great deal of acid to the water, which even destroyed plumbing fixtures. The average acidity for each of the seven years preceding the operating of the plant, in parts per million, was 43.0, 42.1, 34.5, 50.6, 32.1, 28.0 and 43.4 respectively; and the maximum 125, 200, 140, 170, 80, 120 and 133 respectively. During October to December, when a part of the plant was tried out, the average was 150 and the maximum 240. The difficulty of treatment was aggravated by the sudden changes in acidity; the hardness having been known to jump from 110 at 4 a. m. to 510 at 9 a. m., and the acidity from 30 to 210 during the same period.

At the convention of the American Water Works Association last month Mr. Alexander Potter, the designing and constructing engineer of the plant, presented a paper giving a brief account of the working of the plant; the above being an abstract of his introductory statements. Continuing, he described the novel features of the plant as being the method of cleaning the settling tanks without emptying them, the economic use of wash water, and the arrangement for entry and exit of water to and from the settling basins.

The first he described as follows:

Carriers are built under the floor of the settling tanks. The carriers in each of the four tanks are divided into four zones. Small circular holes seven-eighths inches in diameter, spaced four feet apart connect the bottom of the tanks with the carriers. The outlet end of each set of carriers is controlled by a valve. In cleaning the basins, the valve controlling each zone is kept open until the precipitated solids are removed, and the water runs free from sludge. The amount of water used in cleaning the settling tanks and baffling tank is approximately 1700 gallons per day for each degree of hardness in the water.

Concerning the wash water, the novel feature is that

The entire machinery is operated by a water motor on the top floor of the softening building. The waste water from the motor enters the wash water basin for the filters. This water, charged against the plant as power, should be charged as wash water, thus effecting a substantial saving. The amount of wash water shown in the annexed table is, however, the actual amount of water used in washing the filters, and amounts to 0.72 per cent of the total amount pumped.

The water enters the settling tanks over a long weir and, after traveling a comparatively short distance, leaves over another long weir; the idea being to reduce velocity of flow (although at the expense of distance) and consequently increase

the precipitation. He reported the water to be "perfectly clear and free from turbidity" as it leaves the tanks.

The water is filtered to remove the insoluble chemicals and other suspended matter, but the filters showed little or no efficiency in reducing bacteria. In fact, "during the summer of 1909, when the bacterial count in the raw water ran from 5 to 100 or 200, the bacteria in the settled and filtered water showed increases over the number in the raw water." "In fact, it is the exception rather than the rule, that the bacterial count of the filtered water is lower than the bacterial count of the settled water."

Since the treatment apparently gave no protection against typhoid bacteria, hypochlorite of lime was used a large part of the time in November and December of last year, and constantly since then; and this has almost completely sterilized the water. The amount used has varied between 1 and 12 pounds per million gallons (one part of available chlorine to from 25 million to 2 million parts of water). At present it averages about 4 pounds, or one part to 6 million. When this is used no coagulant is added to the water; but from a raw water containing 450,000 bacteria and 1,500 turbidity is produced a clear and nearly sterile water.

The operation of the plant during the thirteen months ending with February of this year was given by Mr. Potter, which we present in condensed form in the accompanying table.

The average cost of chemicals during the past year, per ton of 2,000 pounds, has been: Lime, \$8.30; soda ash, \$18; sulphate of iron, \$11; alum, \$12.50; hypochlorite of lime, \$42. During the year ending February 26 there were put into the water at the plant about 1,137,000 pounds of lime; 1,597,000 pounds of soda ash; 85,813 pounds of coagulant, and 1,708 pounds of hypochlorite of lime. The average cost of chemicals per million gallons was \$13.36, ranging from \$4.92 to \$32.14; and the average cost of labor was \$8.05, ranging from \$6.36 to \$10. The total cost per million gallons averaged \$21.41, ranging from \$11.98 to \$40.10. The interest charge on the construction was about \$7.13 per million gallons, and a depreciation should be charged of fully as much, or a total of \$35.67. Against this Mr. Potter estimates a saving of \$10,000 a year in soap, \$20,000 in reduced wear on fabrics in washing, \$3,000 in reduced repairs to pumping plant, \$35,000 less repairs to plumbing, \$15,000 in reduced number of employees on house connections, and \$6,000 in decreased pumping (attributed to decreased leakage due to eating out of fixtures).

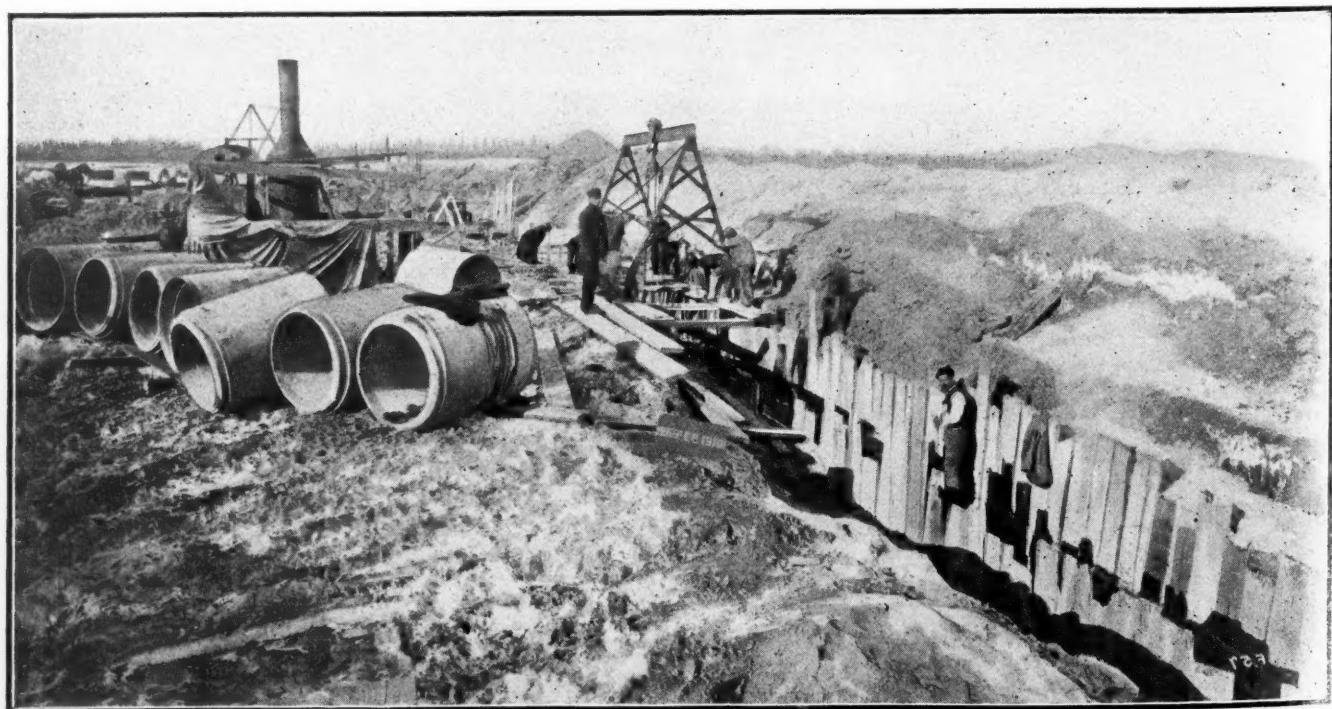
CONCRETE PIPE AT TORONTO

Pipe Thirty-six to Seventy-two Inches Diameter—Securing Flexible Water-Tight Joint with Tar and Burlap—Handling Large Pipe—Construction of Manholes

By FRANCIS F. LONGLEY
Resident Engineer, Toronto Filtration Plant

In a previous issue the writer described the Toronto filtration plant. Reinforced concrete pipe was specified for several pipe lines at this plant—for the main raw water distributors between the pumping station and the several filters; the pure water pipe between the regulator houses and the filtered water reservoir, and the main drain pipes. The contractor for the construction of the filtration plant arranged with the Lock Joint Pipe Company of New York City for the construction of these pipes. The moulds for the manufacture of the pipe were shipped to Toronto and the pipe manufactured in that city at the site of the filtration plant. The manufacturing was done under the direction of a superintendent of the company and local labor was employed and local materials used. The laying of the pipe has proceeded during the last three or four months.

Extreme precautions were taken in the design of these pipe lines and in the specifications for their construction to obtain water-tightness. The concrete mixture specified for the pipe, viz., one barrel cement, weighing 350 pounds net, seven cubic feet of sand and ten cubic feet of ballast, was specified for its density and the procedure of laying the pipe and finishing the joints was rather unusual. Each length of pipe is to be laid in the trench, fitted to the lengths of pipe already laid, and brought to line and grade supported on wooden blocking. When the pipe is in position and after several lengths ahead have been laid, the joints between the two lengths of pipe are to be caulked. The outside surface of the pipe for several inches each side of the joints is then to be smeared with hot tar and covered with alternate layers of building paper and hot tar and finally with a strip of burlap bound with two iron wires twisted tightly in position, one each side of the joint. The trench is then back-filled, compacting the sand as much as possible. Up to this point nothing is done to the joints on the inside of the pipe. All the pipe lines are to be finished upon the outside as just described and then work on them shall be suspended for the time being.



LAYING 36-INCH PIPE. TRENCH AND RIG FOR HANDLING PIPE

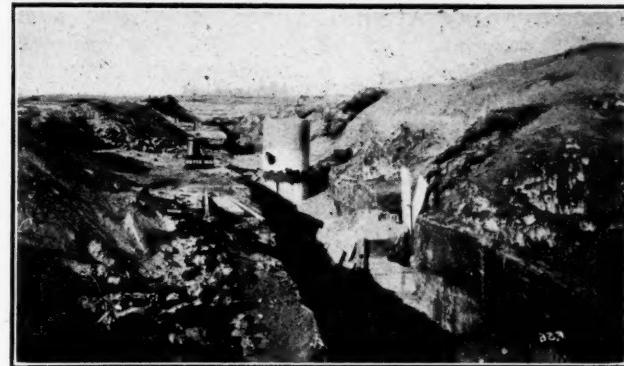
The work thus far will have been done in dry trenches. When the filter construction is finished some of these pipe lines will be entirely below the ground water level, and others partly below. Some settlement of these pipe lines, with consequently more or less distortion of the lines, is expected when the ground water level is permitted to rise from its present low level, produced by the drainage operations, to the normal lake level. In order that this settlement shall not produce permanent leakage in these pipe lines it is specified that before the completion of the work these pipe lines and the filters will all be filled with water and the ground water will be permitted to rise about the pipes to its normal level and this condition will be maintained for a week to ensure as complete a settlement as possible of the sand and all other structures and pipes. After this period of test and settlement the pipe lines shall be entirely emptied by pumping and the inside joints, to which nothing has been done up to this time, will be completed by the contractor, all the work being done from the interior of the pipe.

It can readily be seen that the tightness in the outside joint of oakum and tar paper, tar and burlap, is a most important matter in facilitating the final finishing of the joints inside. To this end the contractor has done considerable experimenting and has finally adopted the following procedure: The joints are caulked with dry oakum until they are moderately well filled and then the outer joint is caulked with oakum soaked in melted tallow. This makes a joint which will be substantially watertight providing the slight settlement of the pipe does not pull the two sections apart. The superimposed layer of tar paper, etc., is an additional obstruction to the flow of water into the pipe and it is hoped that the combination of these two will be reasonably effective in keeping the water out of the joints till they can be finally sealed from the inside.

The finishing of the joint from the inside will consist simply of the sealing of the dovetailed groove with mortar made of one part Portland cement and one part sand, and will be a simple enough matter where there is no leakage of water into the joint from the outside.

Another precaution that is taken in this design is to provide a vertical joint in the pipe line immediately outside of every masonry structure that the pipe line enters. With this end in view, short sections of pipe designated as stubs were cast, having a laying length of 13 inches. Where the concrete pipe line is to enter a masonry structure, one of these stubs is built solidly into the masonry with the bell or spigot projecting and the pipe line is laid up to this, thus providing a plane of cleavage in case of unequal settlement of the structure and the pipe line.

The laying of the pipe in the dry trenches is well along towards completion and the outside joints have been made as the work progressed. A small steel framework running on wheels and supporting a beam with a differential block and tackle has been used to handle the 36-inch pipe. This equip-



PARTLY FINISHED MANHOLE ON 36-INCH CONCRETE DRAIN

ment is shown in the photograph on page 762. The pipe is rolled out onto planking over the trench and underneath this framework, which straddles the trench, and is then lifted by the tackle, the planking removed and the pipe lowered to its place. The larger pipes, 54-inch and 72-inch diameter, have been handled with a steam derrick traveling alongside the trench. This equipment, together with a partly-completed line of the pipe is shown in one of the accompanying views.

The man-holes on the 36-inch drain are built up of lengths of the 36-inch pipe set vertically upon the top of the monolithic structure on the pipe line itself. The vertical sections brought up to the right height are surmounted by reducers which were cast in the same manner as the pipe by the Lock Joint Pipe Company and upon the top of which rest the cast-iron man-hole covers. One of these man-holes partly completed is shown in one of the photographs. This shows also the outside joint of tar paper and burlap.

The masonry structures forming the bottoms of man-holes and the bends and connections between two or more pipe lines are built as monolithic concrete structures.

METER MAINTENANCE

In a paper before the recent convention of the American Water Works Association, Mr. A. W. Cuddeback discussed many practical points with reference to the care and maintenance of meters in service. The meter he described as a tool or instrument for measuring water, which needs constant attention if it is to measure with a reasonable degree of accuracy. For this reason it is necessary that the control of the meter should be absolutely in the hands of the Water Department; for which reason he believes it to be inadvisable that the consumers should own the meters. The department or company should have a well-equipped repair shop and testing laboratory, and every meter, whether new or recently repaired, should be tested for accuracy and sensitiveness before leaving the shop. He would test each meter for three rates of flow—a full stream, one representing about the ordinary faucet flow, and a third to represent what is ordinary leakage—or say, $1/32$ -inch orifice under 40 to 60 pounds pressure.

He calls special attention to the importance of selecting the proper size, kind and type of meter for each particular service, by giving the results of tests on a number of meters which show, among other things, that if the meter is too large it will lack in sensitiveness and will fail to record leakage of even considerable amounts. "The meter best adapted for ordinary domestic or house service, taking account of first cost, durability and cost of maintenance and repairs, seems to be the disk type; and from my experience with meters of this type, covering a period of some ten or twelve years, I have not been able to formulate any rule that, after a definite period of service, or after a definite amount of water has passed through a meter, it should be removed for test." His method of determining when a meter should be removed is to carefully inspect a series of successive quarterly reports, comparing the same quarters



HANDLING 72-INCH PIPE BY DERRICK

of successive years. A general falling off of each quarter from the corresponding quarters of previous years would justify a suspicion that the meter was under-registering.

Some meters are too lacking in sensitiveness or of too large a capacity to indicate small leaks, and to assist in determining these he furnishes to each of his meter readers an audiphone, which is simply the adaptation of an ordinary telephone receiver. This, he states, will give information of a leak which would not be recorded by the meter, it being only necessary to hold the instrument to the service pipe when the meter is not moving. Among the causes of loss of delicacy and of under-recording, perhaps the most common are deposits in the meter and wear of the gears, although a wearing away of the disk, and having the gear stuffing-box too tight are causes which are frequently discovered.

ARBITRATING A FRANCHISE

A DIFFERENCE of opinion having arisen between the City Council of Pekin, Ill., and the Pekin Water Works Company concerning the terms of a franchise to be granted the latter, the company recently submitted to the Council a proposition which seems upon the face of it to be so fair to all concerned and so well adapted to bringing about a settlement of the dispute that we recommend the terms to the consideration of others, both city officials and private corporations, which may find themselves involved in a similar difference of opinion.

The company proposes that the questions in dispute be submitted to a board of arbitration consisting of three disinterested hydraulic engineers; all three of these to be appointed by mutual agreement of the city and company, and not one by each and the third by these two, as has been the more common method. In this way no member of the board feels himself in any way required to act as the special representative of either party to the controversy. This commission would determine the fair cash value of the plant, including distribution system and all things pertaining to the obtaining and distributing of the water, the company offering to give the board of arbitration permission to inspect all its books, records and property. The board would also determine the efficiency of the plant with regard to fire protection and determine what extensions or additions to the distribution system or at the pumping station are necessary, and estimate the cost of these. The board would also determine the revenue or income required to yield an adequate and fair return on the investment already made on the property, together with that necessary to comply with any requirements of the board for increasing the efficiency of the plant, and to meet all the expenses of maintenance and operation of the entire plant, the fixed expenses, etc. In connection with this the board would formulate a schedule of rates for hydrant rentals and one for private consumers, these to be calculated to produce the required revenue as determined. The board would also draw up proper rules and regulations defining the mutual relations and obligations of the city and the company, and conserving both the rights and duties of the company and of the city.

The board would draw up, in proper legal form, a franchise based upon the above facts and ideas, and the city would agree to accept and enact the same within thirty days after the filing of the reply, and the company would sign the same within ten days thereafter. The actual necessary expenses of the board would be divided equally between the city and company.

In concluding the proposition, the Pekin Water Works Company says: "The company believes that it is entitled to an actual fair cash return upon the moneys invested in the utility, and that the company in consideration thereof, in good faith, is bound to deliver a fair measure of adequate service to the city of Pekin and its citizens." It may be that there are questions in dispute which would not be met by this proposition of the company; but, so far as the reading of it enables one to judge, it would seem to indicate a desire on its part to receive only its just dues and to render therefore adequate and proper service as a holder of a public franchise.

OZONIZER EFFICIENCY

THE following letter from Dr. K. G. Frank, which is self-explanatory, was submitted to Mr. Meeker in order that his reply might appear at the same time as the inquiry. Mr. Meeker informed us that a full technical explanation would involve higher mathematics and a considerable number of intricate electrical and chemical formulas, and at our request he confined himself to a general answer, for which we believe most of our readers will thank both him and us.

Editor of Municipal Journal and Engineer.
239 West Thirty-ninth Street, City.

New York,
May 9, 1910.

Dear Sir: In the issue of your valued paper of April 20 there appeared an interesting article by Mr. Clifford D. Meeker, "Ozone Sterilization of Water." In this article the writer compares the efficiency and output of the apparatus of the Gerard Ozone Process Co. with the Siemens Ozonizer and claims, as will be seen from the diagrams Fig. 1 and Fig. 2, page 565, a much higher efficiency for the Gerard apparatus than for any other one. (Apropos, the efficiency of the Siemens Ozonizer is not given accurately.)

As I am unable to derive from Mr. Meeker's article and from my personal acquaintance with the Gerard apparatus what accounts for such a high efficiency, I would ask Mr. Meeker to state in what way these results have been obtained, i. e., the exact account of the measurements and determination of ozone. Further, I would ask him to state whether the losses of energy in transformer, etc., have been considered.

There is a second point in Mr. Meeker's article which is not entirely clear to me. On page 567 he writes: "Because of the high-tension current that it used, it was found that a great deal of induction took place between the tubes themselves and the outside casing A. In order to overcome this inductive loss and regulate the superimposed wave form, an inner condenser or 'barrier' was placed. . . ." From an electrochemical point of view I cannot see in what way these condensers could "overcome the inductive loss and regulate (?) the superimposed current."

Aside from the theoretical interest as to the right interpretation of the electrical phenomena in question, it is very important from a technical and commercial point of view to know whether the application of such a condenser really does increase the efficiency of such an ozonizer or not.

I would ask Mr. Meeker to enlighten us on this subject.
Very truly yours,

DR. K. G. FRANK,
Representing Siemens & Halske, of Berlin.

Editor of Municipal Journal and Engineer.
239 West 39th Street, New York City. May 14, 1910.

Dear Sir: In response to your communication of the 10th, enclosing a letter from Dr. K. G. Frank, which I have read over very carefully: Without going into the technical details of the method of arriving at the equalizing effect of the inner condenser or barrier that is used on the Gerard ozonizer, I simply wish to state that the action of the machine is toward the absorption of the peaks of extraordinary high voltage waves. This is covered in the article referred to and may be found in the first column, page 567, of your issue of April 20th last. The reasons for the high efficiency of the apparatus are covered, I believe, in the prologue of the article referred to in the descriptions of the growth of the progress of manufacture.

There is one correction that I would like to make in the article and that is the titles to Figs. Nos. 1 and 2 should be interchanged, which is evident from the charts themselves.

If I made an error in not accrediting the Siemens-Halske company with sufficient efficiency, I apologize to them, as my data were taken from their catalogue and from an article on ozone that was delivered before the Belgian Society of Electrical Engineers and is contained in the report of that society, Vol. 26, issued in August, 1909. A large part of the information that is given in the article in the "Municipal Journal and Engineer" was obtained from a translation of the above-mentioned bulletin.

While I would be glad at any time to enter into a technical and mathematical discussion of the electrical characteristics found in high-tension ozonizers, I do not feel that your readers would be particularly interested in a discussion of apparatus, and the article as it appeared in your paper was intended to bring before them anything that might be of interest in the way of water or sewage sterilization. The Gerard system was described to perhaps too great an extent, but this was only because of its simplicity and also on account of the familiarity of the writer with that apparatus. In all probability the majority of your readers are interested only in the results of the apparatus and not in the claims of the various manufacturers, but should you have a call for discussion as outlined above, I would be more than pleased to take up this matter at length.

Yours very truly,
CLIFFORD D. MEEKER.

Municipal Journal and Engineer

Incorporated

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will do so gladly and without cost.

MAY 25, 1910.

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City Control of Sidewalks

Two items appear on other pages of this issue illustrating the interest which cities have in the construction of sidewalks, and the arguments previously made by us for more complete municipal control of the same. Bozeman has decided to introduce the practice which has become standard in many cities of appointing a city inspector to oversee all construction of cement sidewalks in the city in order to insure their more satisfactory character. The Supreme Court of Wisconsin has recently decided that the city of Milwaukee, when it undertook to build a walk at the expense of the abutting owner, was in duty bound to secure for him a walk which is at least

fairly good, and if the walk is defective the owner has the right to legal relief from payment therefor as an unjust charge. Did not the law recognize the property owner as the real owner of the sidewalk, but were the sidewalk public property, as is the street pavement, no such suit could have been won by a private individual against the city, unless he sued an official merely as a citizen and a taxpayer. Since the city's interests are such as to call for its oversight of the sidewalk, and it can be held responsible for any accidents occasioned by the insufficiency of such sidewalk, and the walk is for the common benefit of the whole city more than for the individual on whose property it abuts, the construction and maintenance of this walk would seem to be a municipal, rather than a private, matter.

Lime Sludge Bacteria

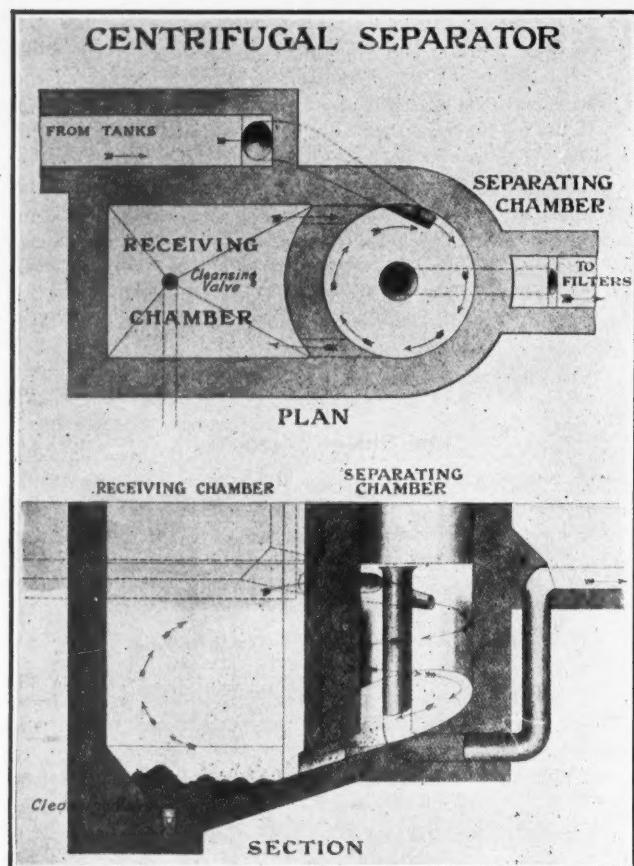
In the description by us on May 11th of the water treatment plant at Columbus, O., mention was made of the discovery that there was an enormous development in the lime sludge of a species of bacteria which were of a kind found infrequently, if at all, in the crude water. Where the bacterial tests at the plant are quantitative only, the discovery of these bacteria might apparently indicate no reduction at all by the plant, whereas as a matter of fact 99 per cent of the original bacteria might have been removed, their places being taken by these lime bacteria; the inference being incorrectly drawn that none of the pathogenic bacteria had been removed, whereas, possibly, all of them might have been. This is suggested by the statement in the article describing the water softening plant at McKeesport, that this plant removed practically none of the bacteria under certain conditions, and, in fact, that the number increased in passage through the plant. This plant used about 3,000 pounds of lime per day and it seems possible that in the lime precipitate similar bacteria might have developed and thus account for the apparent failure of the plant to effect any removal of the originally contained bacteria.

This seems to us to be an important matter deserving consideration in all plants where lime is used, and calling for tests for pathogenic bacteria rather than mere quantitative tests when the latter would indicate little or no decrease in the bacterial content of the water.

Separation of Sewage Solids

In a paper before the Royal Institute of Public Health, Mr. Arthur J. Martin has discussed at some length the methods of removing from sewage the coarser suspended matters, describing therein appliances which we believe have never been used, and some of which have not been described in this country. One of these is a construction devised for subjecting the sewage to centrifugal action in small circular chambers. "Such chambers, even for a large works, would be inexpensive, and the head required to generate the necessary velocity would be trifling. Where a scum or froth forms on the effluent it might be drawn off from the surface of the liquid at the center of the chamber." This contrivance is suggested to be interposed between settling tanks and filters, to prevent the sludging up of the latter.

Mr. Martin believes that there is a practical advantage in large surface area in clarification tanks such as would be obtained by placing in tanks coarse-grain filtering material, thus exposing much larger surfaces for removal of solids by surface adhesion. In 1898 he suggested that a septic tank be constructed with a number of decks or floors, on the upper and under sides of which the solids would collect. Much the same idea is illustrated in the Dibdin slate beds, which have been described in previous issues of MUNICIPAL JOURNAL AND ENGINEER; and Mr. Martin believes the slate beds to have some advantages over the decks suggested by him. The upward-flow roughing filter or "cultivation tank" he considers to be of considerable value for this purpose. Much the same idea is included by Dr. Travis in his hydrolytic tanks, in which a series of plates are placed nearly vertical across the direction of the flow. In this connec-



METHOD OF SEPARATING OUT SUSPENDED MATTER BY CENTRIFUGAL FORCE

tion Mr. Martin refers to the Hampton doctrine which was advanced and has been ably defended by Dr. Travis. This doctrine teaches that "The purification process is essentially a physical operation, being, in its complete expression, a continuous des-

olution action. In other words, the suspended and soluble impurities contained in the sewage drop out of, or are, as solid or insoluble matters, absorbed from that liquid as effectually as if they had been entirely removed by a process of precipitation, to which, indeed, the action is analogous."

The author of the paper describes at some length a construction which has been used by him for affording the desired multiplicity of surfaces. He was impressed with the desirability of obtaining a material to place in clarification tanks which would clog less readily than broken stone and which could be cleaned without removal, and decided to try ordinary agricultural drain tile. He claims no originality for the idea, which had previously been suggested by Mr. Dibdin, but believes that he is the first to carry the idea into practice. These tiles he placed in some cases horizontally, in others vertically. In the former they are laid with a slight fall to facilitate drainage. The pipe break joints, with a space of about one inch between consecutive pipes in each row so as to permit the effluent to pass from line to line of pipes as well as through them. He recommends small pipes, say, 2 inches in diameter, also suggesting that octagonal ones will pack more firmly in the bed than round ones. At a cost of pipes of \$7.50 per 1,000 he calculates that the cost would be \$220 per acre, to which must be added cost of carting and labor of laying, and a margin should be allowed for breakage. At English prices this would be about three times as expensive as broken stone.

"To compensate for this extra cost, the pipe-filling appears to possess four advantages: First, its absolute homogeneity, and the consequent uniformity of flow throughout the bed, the whole of which is thus brought into effective action; secondly, the reduced liability to clogging; thirdly, its practical indestructibility, and, fourthly, the possibility of cleansing it without removing it from the bed. Assuming that the two kinds of filling are equally effective and capable of treating equal volumes of effluent, an annual cost of 6 d. (12 cents) per yard for taking out and washing the stone (over and above that of cleansing the pipes) would balance the difference in the initial outlay. Flushing would probably be found sufficient for the removal of loose deposits from the pipe-filling, but in the event

Creosoted Wood Block Specifications—Comparison of Requirements of Various Cities

CITY	Size of Block	2d Growth Timber	Heart Wood	Kind of Wood	Method of Seasoning	Lbs. of Oil	Gravity	Distillation Requirements
Boston.....	4"x4"x8"	Not allowed	.90%	Southern Long Leaf Pine	.....	20	1.12@68° F.	Not more than 35% over at 315° C. Not more than 50% at 370°.
Minneapolis....	4"x4"x5"-8"	Not allowed	Not mentioned	Yellow or Georgia Pine, Norway Pine, Washington Fir or Tamarac	Heat and Vacuum	16	1.12@20° C.	
Philadelphia....	4" deep, 3"-4" wide, 6"-10" long	Not allowed	90%	Southern Long Leaf Yellow Pine	Heat and Vacuum	20	Not given	Not mentioned.
Toledo.....	3", 3½" or 4" deep, 6"-8" long, width vary	Not allowed	90%	Southern Long Leaf Yellow Pine, Sou. Black Gum	Dry Heat or Superheated Steam in Closed Coils	16	1.10@68° F.	Up to 600° F., shall not lose more than 35%.
St. Louis.....	3½" deep, 3"-4" wide, 6"-10" long	Not allowed	75%	Southern Long Leaf Yellow Pine	.....	20	1.10@38° C.	
New York.....	3½" deep, 3"-4" wide, 6"-10" long	Not allowed	90%	Sou. L. Leaf Yellow Pine, Sou. Black Gum, Norway Pine, Tamarac	.....	20	1.12@68° F.	Not over 35% up to 315° C. Not over 50% up to 370° C.
Pittsburg.....	3½" deep, 3"-4" wide, 6"-10" long	Not allowed	90%	Same as New York	.....	20	1.12@68° F.	Same as New York.
Mobile.....	3" deep, 4" wide, 6"-8" long	Blocks to be from sound ve trees	90%	Long Leaf Yellow Pine Variety	Superheated Steam or Dry Heat	20	1.12@68° F.	Not over 40% up to 600° F.
Indianapolis....	3"x3"x5"-8"	Not allowed	.....	Long Leaf Yellow Pine	Superheated Steam and Vacuum	20	1.12@68° F.	Not over 35% up to 600° F.
Des Moines....	3½"x4"x6"-8"	.....	.....	Norway Pine, Tamarac, Southern L. Leaf Pine	Heat and Vacuum	20	1.12@20° C.	
Chicago.....	Not less than 7 rings per inch	Not allowed	.....	Sou. L. Leaf Yellow Pine, Tamarac, Sou. Black Gum	.....	20	1.10@25° C.	
Baltimore.....	3"x3½"x8"	Not mentioned	90%	Long Leaf Yellow Pine or Black Gum	Dry Heat or Live Steam	20-22	Not given	Not more than 5% tar or 5% carbolic acid.
Cincinnati.....	3½"x3"x6"-8"	Not allowed	90%	Southern Long Leaf Yellow Pine	Dry Heat or Superheated Steam in Closed Coils and Vacuum	20	1.10@68° F.	Not more than 35% up to 315° C.
Detroit.....	4"x3"x6"-8"	Not allowed	.....	Long Leaf Yellow Pine	.....	.....	.....	.....

NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest, Under Consideration by City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Police and Fire Items—Government and Finance

ROADS AND PAVEMENTS

City Sidewalk Inspectors for Private Work

Bozeman, Mont.—On recommendation of City Engineer Will Hartman, Council has decided to have inspectors for private cement work. The resolution was introduced by Alderman Burke and provides that inspectors be appointed by the City Engineer and Street Committee, the pay for such inspectors to be \$3.50 per day and the cost of the same to be charged against the property.

To Test Right of Municipal Paving

Columbus, O.—In spite of the fact that the bill prepared by City Solicitor Weinland to authorize cities to construct asphalt streets without having to let contracts, failed of passage, Columbus officials may test the present law to determine if such authority is not now given. City officials say that thousands of dollars annually could be saved the taxpayers if the city could make new asphalt streets with its asphalt repair plant, instead of being compelled to do the work by contract. The present law on the subject is not clear, and a test in the courts alone can determine what power the city has. Asphalt improvement of miles of High street is contemplated during the present year, and the officials are anxious to test the law. They probably will bring a test case as soon as a comparatively small piece of asphalt work is presented, by starting to improve with asphalt without letting a contract. In this manner they hope to have the Supreme Court pass on the law.

Brick Men Charge Asphalt Has Monopoly

Evansville, Ind.—That the street paving laws are unfair to the brick contractor and partial to the asphalt contractor was the assertion of R. F. Root, of Terre Haute, representing the Terre Haute Brick Company, to the Board of Works, last week. "With the present laws the asphalt company can afford to spend heavily to get people to vote for asphalt. We brick contractors cannot spend much to win people to brick, for after they decide for brick, we still have to compete with each other. We have brought competition to a point where we are cutting each other's throats. The brick men here, however, have leagued together and placed a solicitor at work, competing with the Western Asphalt Company's representative." "There should be such a man in the field, representing the brick interests," said President Rickwood, "and if there is anything to show up in the methods of the asphalt company it should be shown up."

Work Must Begin Within Three Weeks After Agreement

Indianapolis, Ind.—By a new ruling of the Board of Public Works contractors who do work for the city will be required to begin work within three weeks after they have been given contracts or forfeit them. An effort to have street and sewer improvement work completed without unnecessary delays will be made by the Board also. It is shown on the records of the Board that there are twenty-eight uncompleted contracts for public improvements that should have been completed on or before May 1. The Board complains that streets have been torn up for weeks and even months because contractors have had too many contracts and could not devote sufficient time to the city's work. Many of the contracts that are now uncompleted were awarded during the former administration. Delay in the completion of work let out by contracts has cost the city considerable money. City Engineer Henry W. Klausmann will endeavor to assist the Board in pushing contract work in the city and in avoiding long and costly delays.

Westerly Oils All Its Macadam Roads

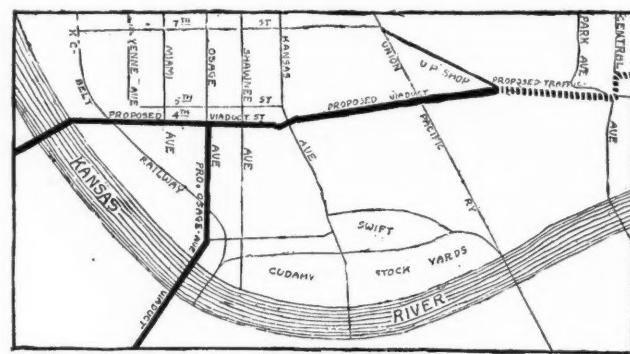
Westerly, R. I.—Every foot of macadamized roadway in the town has been treated with oil this year. Six car loads were used.

Kind of Paving to Be Chosen After Bids Are Received

Springfield, O.—In answer to numerous complaints, Councilman Charles Bauer has introduced in council a resolution calling upon the Board of Control to await the decision of property holders along streets to be paved for ten days after the contracts are let, before choosing the material to be used. Mr. Bauer took the position that the property holder pays for the paving and he should be allowed to choose what he wants. If his wants are made known before the bids are submitted the contractor has the opportunity of boosting the price of his material so the council thought it best to open the bids and then have the property holders decide, or at least 60 per cent of them, what material they desired.

New Thoroughfare and Viaduct Proposed

Kansas City, Kan.—A suggestion embodied in a petition providing better facilities for north and south-bound traffic, is the construction of a viaduct roadway starting south from Sixth street and crossing the shop grounds and railroad yards of the Union Pacific Railway and continuing south



PROPOSED STREET AND VIADUCT ACROSS CITY

through Armourdale to the Kaw River at the Fifth street bridge. The viaduct is intended to connect with the proposed Kansas City, Kan., Union Station and also to connect with the proposed Osage avenue viaduct as an outlet to the Union Station. South of the Kaw it is intended to provide an entrance to Rosedale with the view, ultimately, of annexing that city to Kansas City, Kan., and providing a direct public highway of easy grade and a north and south street railway line.

Highway Department Demands Advance Payment from Village

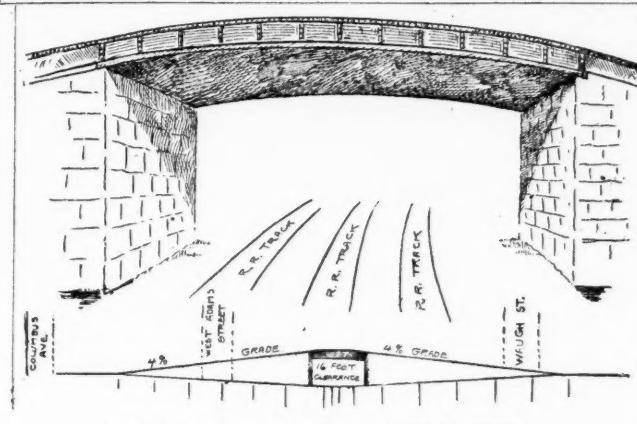
Hamburg, N. Y.—The State has put a hard proposition up to this village in the matter of the new pavements that are to be laid through sections of the village to connect two divisions of State roads. One extends through Boston Valley to Springville and the other to Gowanda. Two streets within the village, about a mile in length, are to be paved this summer with brick by the State and the village. The contracts will be let by the State this month and the work will be done under State supervision. The Highway Commission has made an unexpected demand that the village deposit with the County Treasurer an amount sufficient to cover its share of the cost, some \$25,000. This includes the amount to be paid by the village and the abutting property owners.

Shade Tree Commission Makes Good Beginning

Rahway, N. J.—The Shade Tree Commission, which has been in existence about two months and had at its command an appropriation of only \$500, has just purchased a thousand saplings, which will be set out on land adjoining the almshouse and then transferred to various parts of the city where they are most needed. The majority of the trees secured are Norway maples.

Four Grade Crossings to Be Eliminated

Lowell, Mass.—Four grade crossings will be removed this year by the Boston & Maine Railroad at School, Walker, Lincoln and Plain streets. The sketch presented herewith gives a perspective view of the bridge that will span the



ONE OF BRIDGES TO SPAN RAILROAD TRACKS

Walker street tracks. It will be 40 feet long and 16 feet in the clear, the roadbed remaining at the same level as at present. The grade of the new roadway will vary from 3 to 4 per cent. on either side of the middle of the bridge. The grade will begin to rise almost midway between Columbus avenue and West Adams street on the south and between Bryant and Waugh streets on the north side. Considerable grading will have to be done on adjacent streets.

Paving by Railways

Los Angeles, Cal.—The City Council is giving careful consideration in an effort to outline a policy to be followed by the city in the future in dealing with the question of how the street railway companies shall pave the spaces between their tracks. All the companies will be given an opportunity to state their views and the views of their experts and the Board of Public Works and the City Engineer will also be present. The Board and the railway companies have been in dispute about the kind of pavements the companies are laying and the dispute resulted some time ago in the Board forcing the railways to suspend all operations now in progress. The Board wants to require the companies to conform to the city's specifications for each street. The railways want to adopt uniform specifications of their own for all streets. Homer Hamline, City Engineer, opposes the specifications advocated by the companies on the ground that they produce poor pavements. In a report which he made to the Board of Public Works and which was indorsed and forwarded to the Council, he said:

The most serious phase of the problem in Los Angeles is the poor track and pavement construction along the railway strip. The result is that team and automobile traffic is practically forced to shun this portion of many of the streets. In the matter of poor and antiquated track construction and generally unsatisfactory pavements within the street railway strip, Los Angeles has an unenviable record. The conditions along some of the tracks are positively dangerous for team and automobile traffic.

SEWERAGE AND SANITATION

Sewer Suit Dismissed

Newark N. J.—The United States Supreme Court at Washington, D. C., officially dismissed the Government's suit against the Passaic Valley Sewerage Commission on May 17.

Determined to Improve Sanitary Conditions

Muncie, Ind.—Sanitary Officer Leonidas Marrs is already busy notifying residents of certain parts of the city of unsanitary conditions, and he expects to continue this work as the summer season advances. It is the intention of the members of the city Health Board to "start early" with the work of warning the public with regard to the rules, which must be obeyed. Prosecutions will be made in cases where the laws are flagrantly and persistently disobeyed. The intention of the Board is to have the sanitary condition of the city of Muncie better than for years.

The Civic Club Anti-Fly Poster

Harrisburg, Pa.—The Civic Club has issued the following poster:

From flies and filth to food and fever.

Clean up your houses and yards. Municipal housecleaning week, beginning Monday, May 2, 1910.

This is the time to look out for the flies. The common house fly is a carrier of disease.

Rules for dealing with the fly pest:

Keep the flies away from the sick, especially those ill with contagious diseases. Kill every fly that strays into the sickroom. His body is covered with disease germs.

Do not allow decaying material of any sort to accumulate on or near your premises.

All refuse which tends in any way to fermentation, such as bedding straw, paper waste and vegetable matter, should be disposed of or covered with lime or kerosene oil.

Screen your food.

Keep your receptacles for garbage carefully covered and the cans cleaned or sprinkled with oil or lime.

Keep all stable manure in vault or pit screened or sprinkled with lime, oil or other cheap preparation.

See that your sewage system is in good order; that it does not leak; is up to date and not exposed to flies.

Pour kerosene into the drains.

Cover food after a meal; burn or bury all table refuse.

Screen all food exposed for sale.

Screen all windows and doors, especially the kitchen and dining room.

Burn pyrethrum powder in the house to kill the flies.

Don't forget, if you see flies, their breeding place is in nearby filth. It may be behind the door, under the table or in the cuspidor.

If there is no dirt and filth, there will be no flies.

If there is a nuisance in the neighborhood, write at once to the Health Department.

Under the direction of the Civic Club of Harrisburg and the Board of Health.

Enforcing Penalty for Expectorating on Sidewalks

Dayton, O.—Strict orders have been given for the arrest of all persons caught expectorating on the streets or in public places, and the police have been rounding up the offenders.

Winsted, Conn.—The borough officials are to make an attempt to enforce the law against spitting on the sidewalks, and Chief of Police Wheeler has placed signs in prominent places.

New Method of Oiling Catch Basins

Newark, N. J.—Chairman J. Walter Dobbins, of the Mosquito Extermination Committee of the Board of Health, has devised an improved method of oiling catch basins for the purpose of preventing the breeding of mosquitoes. Hitherto the practice has been to pour a small quantity of kerosene into the basins at certain intervals of time. The result was unsatisfactory because the flushing of hydrants, cleaning of basins and occurrence of showers removed the film of oil. After considering the matter, Mr. Dobbins decided that some way must be found to provide a small but constant supply of oil for the sewer basins. He found that by the use of a long, slender circular wick, oil could be siphoned from an ordinary square two-quart tin oil can in such a manner that it would drip steadily until the can was practically empty. Five hundred of these cans have been purchased and put in place. They are fastened to the manhole covers or otherwise in a convenient position. Much less oil is used than formerly and results are better.

Cause of Low Death Rate

Tyler, Tex.—Dr. D. H. Connally, for sixteen years City Health Officer of Tyler, notes a marked decrease in the death rate of Tyler. During his first year as Health Officer the death rate was 27 to each 1,000 inhabitants, while last year's mortality was 8 to 1,000 inhabitants. This great decrease, Dr. Connally says, is due largely to increased white population, improved sanitary conditions and valuable medical discoveries for the treatment of disease. Dr. Connally, from the start, has waged an incessant warfare against unclean streets, alleys and premises. He allows no rubbish to accumulate around the houses, no weeds to grow, and as a result of his efforts Tyler presents a clean appearance and its sanitary condition is as good as it is possible to make it.

WATER SUPPLY

Well Is to Supply a City

Dalton, Ga.—An effort to pump "the bottomless well" dry was made here recently, and after several hours' work with a pump capable of bringing up 2,000 gallons of water per hour, the attempt was given up as a bad job. The well is located in the northwestern part of the city and it is believed that an underground river flows through it. When the well was being dug some time ago, a portion of the bottom "fell out" and a roaring sound similar to the sound made by a water fall was distinctly heard. A larger pump will be attached to the engine near the well and another test will be made within a short time. If the well pans out the city may in the future get its water supply from it.

El Paso Will Own Water Works

El Paso, Tex.—Municipal ownership of water works was carried at the election, May 13, by a vote of 657 out of a total of 807. For a continuance of the present arrangements with an increase of rates, 148 votes were registered.

Gravity System Nearly Done

Forest Grove, Ore.—Superintendent Richardson says the new gravity water system should be ready in about two weeks. The contractors who have been getting out the bored pipe are not able to furnish pipe as fast as it can be used, so they have made arrangements with a Portland company to furnish what they lack.

Water Works Show Good Profits

Kansas City, Kan.—A report of the condition of the Water Department, which James A. Cable, Commissioner of Water and Lights, submitted to the Board of Commissioners, showed a profit of \$6,170.88 for the month that the department has been in operation under the commission form of government. The \$3,000 paid to the city for an auxiliary supply of water while repairs were being made on the plant at Quindaro will not have to be met in succeeding months, and Mr. Cable said that the profits would be increased proportionately.

Madison, Wis., Water Impure

Madison, Wis.—Investigations into the purity of the Madison city water supply made by the State hygienic laboratory at the university, conducted by Dr. M. P. Ravenel and assistants, reveal that the water is contaminated. At various times within the last month tests of the water have been made at various places and evidences of bacteria and other foreign substances found. Bacteriological analyses of the water were made by Dr. Ravenel, Dr. W. D. Frost and professors of the Wisconsin State University. Colon bacilli were found on April 5. Since then other bacteriological contamination has been discovered at various times, and also duck weed in several places, showing, without question, that lake or surface water had entered the system. Several cases of typhoid are reported among students.

Water Meters Being Generally Installed at St. Augustine

St. Augustine, Fla.—Following the arrival of a large shipment of water meters last week, Superintendent Pellicer of the City Water Works will be busily engaged for some time in installing the meters about the city. The Board of Bond Trustees wishes eventually to have the entire city metered and is working it out as rapidly as funds permit.

Will Search for Water Waste

Yonkers, N. Y.—Commissioner of Public Works Brady intends to engage the Pitometer Company, of New York, to make a test of the city's water supply in order to discover the leakage which is said to be costing Yonkers perhaps \$150,000 a year. The work is to be undertaken at once, and while the amount named in the ordinance is "not to exceed \$1,500," it is understood the outside price asked by the Pitometer Company is \$1,350. The test will be made to ascertain what becomes of the 80,000,000 gallons of water which it is asserted is pumped by the city and lost each year. The work will consist of a three days' test at the Fortfield, Grassy Sprain and Lake avenue reservoirs, as well as the various pumping devices and the water mains themselves.

Filtering Cost Lessened with Covered Beds

Providence, R. I.—The comparative cost of pumping and filtering 1,000,000 gallons of Pawtuxet River water at the Pettaconsett pumping station has been compiled for the past three years by the City Engineer's Department. These figures are of some interest, from the fact that the first year, 1907, included in the comparative table, was with the filter beds open, while the years 1908 and 1909 were with the filter beds covered. The table shows that the total cost of filtering per 1,000,000 gallons has steadily decreased during the three years, as has the total cost for pumping and filtering. In the figures of costs of pumping alone, the years 1908 shows a lower rate than the other two years, and the same fact is to be noted in the total cost of cleaning the filter beds. The latter table, however, shows a difference of but two cents between the year 1909 and 1908, the low year, while for 1907 the rate was more than twice that of each of the other years. The comparisons are as follows:

	1907.	1908.	1909.
Cost of pumping 1,000,000 gallons.....	\$5.53	\$4.93	\$5.14
Total cost of filtering 1,000,000 gallons.....	7.48	5.51	5.28
Total cost per 1,000,000 gallons for cleaning beds	4.20	2.03	2.05
Total cost per 1,000,000 gallons for pumping to filter	3.28	3.48	3.23

Sioux City Water Works Report

Sioux City, Ia.—An increase of more than \$8,000 in the receipts of the water works for the year ending March 31, 1910, over the previous year indicates the success of the works, according to the annual report of Phil Carlin, Superintendent. The maintenance and repair expenses show a slight increase over those of the previous year, due to the Perry Creek flood, which caused some damage to the plant. The total receipts for the year were \$88,097.35, an increase of \$8,482.26. The operating expenses were \$81,094.13; repair expenses, \$2,599.38. The distributing system was improved and extended during the year. Of 16-inch pipe, 2,395 feet were laid; of 6-inch pipe, 3,898; of 2-inch galvanized iron pipe, 24,814. Several thousand feet of pipe were laid by the Orphanage. The total pipe laid during the year was 31,107 feet. The total cast-iron pipes now in use is 60 miles, 5,098 feet; the total of pipe 2 inches or less in size, 15 miles, 2,266 feet. Seven 4-inch fire hydrants were placed, bringing the total to 348. Seven valves were added at various corners, and 9 valves for sprinkling plants of private corporations were placed. A total of 386 new taps were made during the year. Meters were increased by 369, making a total of 4,901. Several improvements were made at the Main street pumping station and at Station No. 2. Four new wells were put down during the year. The Main street pumping station pumped 699,818,480 gallons, Station No. 2, 38,169,305 gallons. The city used 40,657,965 gallons more water than it used the previous year. The average daily per capita consumption was 44.9 gallons.

Plenty of Water This Year

Spokane, Wash.—All danger of a water shortage in Spokane is past, according to Mayor N. S. Pratt. Beginning with the first of June, if not before, the daily capacity of the pumping plant will be more than doubled, this being made possible by the installation of several new pumps which have just arrived. The work upon the new station is practically completed and the pumps will be placed in position as rapidly as possible.

New Water Company to Cut Rates

Egg Harbor City, N. J.—A franchise has been granted to a new water company which agrees to furnish the city free water for all public buildings and fountains. Reduced schedules and a larger plant are also promised. The new company was organized in consequence of the refusal of the Egg Harbor Water Company to furnish free water for the fountain in the park.

Mayor Will Veto Meter Bill

New York, N. Y.—At a taxpayers' hearing Mayor Gaynor announced that arguments against the water meter bill passed by the Legislature were unnecessary as he intended to veto it. The bill made it mandatory upon the city to pay for all water meters and their installation.

STREET LIGHTING AND POWER

Columbus Now Sells Current

Columbus, O.—The first contract for the sale of municipal electric current for commercial power purposes has recently been signed by Superintendent Herman Gamper, of the municipal light plant. The firm that will use the first day current from the city plant is located nearby, and will buy about 1,100 kilowatts per hour. The day capacity of the plant is about 3,000 kilowatts, considering the power furnished to other city departments. Superintendent Gamper believes that before the beginning of next year the city plant may be self-sustaining, if enough contracts for power are signed.

City Profits by Lighting Plant

Escanaba, Mich.—Escanaba's municipal lighting plant appears to be a profitable investment for the city. According to a report presented to the Council, and which was ordered placed on file, the plant earned during the eleven months from April 30, 1909, to March 31, 1910, \$12,454.98 over and above all expenses. The cash on hand March 31 was \$5,604.75. The gross earnings for the period noted were \$43,228.36, and the net earnings \$40,347.44, while the operating expenses amounted to \$27,892.46. The total collections were \$45,291.54, of which \$2,382 was on old accounts. At the date of the report the plant had 1,252 patrons, of which number 1,120 were consumers of electricity and 132 users of gas. The valuation of the plant was \$69,461.79. During the eleven months the overdraft against the plant had been reduced to the extent of about \$4,000 and the bonded indebtedness lessened by \$2,500. The report was listened to with much interest by a large number of citizens.

New Street Lamps Make Noticeable Improvement

South Bend, Ind.—Street lighting at Michigan street and Washington avenue has been improved by two lights erected by the American Trust Company, along the curb, on the Washington avenue side of its building. The lights are of improved pattern, similar to the style which business men in charge of a lighting project desire installed throughout the business section of the city. One of the lights consists of four globes surmounting an artistic iron pole and the other is similar, with two globes. The lights were erected at the expense of the Trust Company.

New Gas Plant in Wakefield

Wakefield, Mass.—A new water gas plant that will double the daily output of gas at the municipal light plant in Wakefield has been put in commission. The first day's output was 40,000 cubic feet, together with 100,000 cubic feet in the regular coal gas plant. The water gas plant has a possible capacity of 200,000 feet daily, and about one-third of the town's gas will be supplied from it at greatly reduced cost. Already an improvement in candlepower is noted. Towns and cities all over Massachusetts that own municipal lighting plants have been watching Wakefield closely for some time. A year ago the town was on the verge of abandoning the electric branch of the plant as a financial failure. The outlook to-day is that in a few years it will be a source of revenue to the town. The Commissioners have returned a balance of \$6,164, and whereas in past years an appropriation of \$20,000 in addition to receipts has been required, this year only \$10,000 is needed. Electric sales have increased 20 per cent and gas manufacturing 5 per cent. A new gas holder of 100,000 cubic feet capacity, new generators and dynamos, have been installed and gas mains replaced, besides many minor changes and replacements, and in twelve months the Wakefield plant has risen from a "junk heap of obsolete machinery," as it was once termed, to one of the best stations of its size in New England.

Mayor Would Remove Poles from Main Street

Wichita, Kan.—As the result of a conference between Mayor Davidson, Fire Marshal Walden and Chief Burt, the mayor has announced that he is in favor of an ordinance requiring that all telephone, telegraph and electric light poles be removed from Main Street and Douglass Avenue.

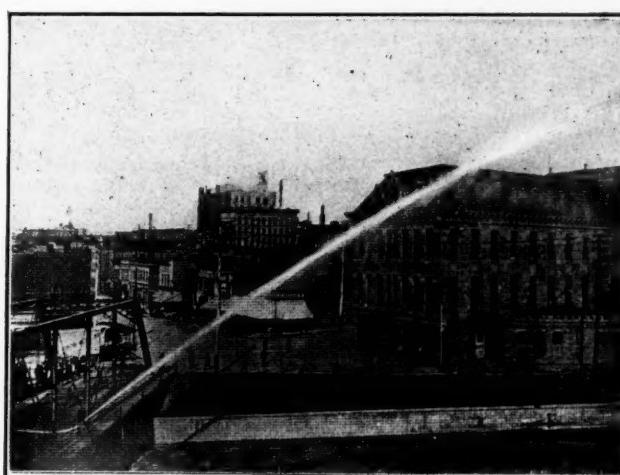
FIRE AND POLICE

Police and Firemen Can Appeal Decisions

Albany, N. Y.—Governor Hughes has signed the bill of Assemblyman Haines, which provides that members of the police and fire departments in cities of the second class who may be aggrieved by the determination of the Commissioner of Public Safety on any trial of charges, may within 30 days after such determination take an appeal therefrom on questions of law to the Appellate Division of the Supreme Court. The Commissioner of Public Safety shall, upon application of the accused, issue blank subpoenas upon which the accused may summon his witnesses whose attendance the Commissioner shall compel. The bill also provides that the Commissioner when dealing out punishments to accused policemen and firemen found guilty on charges may not withhold their pay for a period not exceeding 30 days. Heretofore the decision of the Commissioner has been final and not subject to review by any court except upon questions of jurisdiction.

Scores at Deluge Test

Denver, Col.—Frequent tests of fire apparatus are the rule in Denver. At a recent test the records made were as follows: Two-inch stream thrown a distance of 269



REGULAR TEST, DENVER FIRE DEPARTMENT

feet by means of an Eastman deluge set, controlled by one person. Same two-inch stream attained a height of about 196 feet with 110-pound pressure. With 180 pounds pressure a 1 3/4-inch stream reached a distance of 307 feet.

Comparative Test of Nozzles

Elmira, N. Y.—The following report of tests of Morse and Hart nozzles has been made by Chief Espy. The test of the Morse nozzle:

First Reading—Steam pressure 105 pounds, pump pressure 160 pounds, nozzle pressure 66 pounds, gallons discharged per minute 738. Second Reading—Steam pressure 112 pounds, pump pressure 170 pounds, nozzle pressure 68 pounds. Gallons discharged per minute 748.

Following is the test of the Hart nozzle under the same conditions:

First Reading—Steam pressure 108 pounds, pump pressure 160 pounds, nozzle pressure 72 pounds. Gallons discharged per minute 770. Second Reading—Steam pressure 115 pounds, pump pressure 170 pounds, nozzle pressure 74 pounds. Gallons discharged per minute 781.

Audubon Welcomes Fire Engine

Audubon, N. J.—With the arrival of the handsome new combination chemical and hose wagon for Defender Fire Company, No. 1, there was a large turnout of citizens when the engine was informally housed. The real ceremonies will take place on September 15, when the company will celebrate its anniversary with an all-day celebration. A public inspection of the apparatus was given in the fire house this evening, when nearly every resident of the borough was in attendance. Following the inspection there was a banquet and an entertainment.

Fire Boat Needed in Galveston

Galveston, Tex.—Galveston, the second largest port in this country and ranking with the great ports of other countries, is the only one in this country without a fireboat while some of the eastern ports have a half dozen and more. The value of property along the harbor front and in the business section of the city within reach of a fireboat runs up into the millions and there have been times when over two million dollars' worth of cotton was on the wharf. Chief Gernand, of the fire department, has recommended the purchase of a fireboat and has written exhaustive reports on the value of such a plant, citing instances where the saving of property along the harbor front would pay for the purchase and maintenance of a modern fireboat for several years. The maintenance expense would not be much and it has been argued that the boat could be utilized for other purposes such as hauling garbage out to sea. In this way, it is contended, the city would be getting good service out of the boat, which would have to be in commission day and night and at the same time have it for fire fighting use when necessary.

Presentation of Special Medals for Bravery Abolished

New York, N. Y.—Fire Commissioner Rhinelander Waldo has decided to abolish the well-known medals heretofore given to members of the Fire Department for bravery and efficiency. The Commissioner said it was his intention to establish a medal to be given by the Department to any fireman who has made a rescue at personal risk. The Department medals will be designed by Tiffany and will be of bronze. Mr. Waldo said he believed it was not fair where there were say a dozen rescues at personal risk to have any of the men go without a medal. He said that hereafter no matter how many meritorious acts at personal risk were performed in a year, each act would be recognized by a medal. The action of the Commissioner will be a surprise to the Department. It will mean the end of such famous medals as the Bennett, Bonner, Trevor-Warren, Strong, Brooklyn *Eagle*, Hurley, etc., awarded each year for bravery, and the Stephenson medal awarded to company commanders for general efficiency. The Bennett medal was endowed many years ago by James Gordon Bennett, proprietor of the *Herald*. The Bonner medal was endowed by James LeBaron Johnson, first chaplain of the Department. A long list of names of heroes are coupled with the history of the medals.

Speed of Auto-Engine Limited to Thirty Miles

Macon, Ga.—The auto-engine wrecked by the collision with a telegraph pole will be repaired by the makers, the Webb Motor Company, at cost, estimated to be about \$1,200. When the engine is again operated it will be so geared as to reduce its capacity to thirty miles an hour.

Bicycles for Firemen

Ruston, La.—Chief Breed, of the fire department, has been authorized to purchase from the general fund half a dozen bicycles for use of the members in going to fires. It has been demonstrated that during the time of its existence the fire company has saved a little less than \$5,000 worth of property per year and prevented losses amounting to more than \$70,000 on adjacent property. The rate of insurance has fallen from \$13 per thousand to \$9.

Rare Display of Fire Apparatus

Union Hill, N. J.—The biggest parade of firemen North Hudson has ever participated in will be held in Union Hill June 18, when the Union Hill Hook & Ladder Company will celebrate the fiftieth anniversary of the company's organization. Already fire companies within a radius of 50 miles have signified their intention of being present to take part in the parade that will precede the picnic to be held at Schuetzen Park, North Bergen. For months the members of the company have been at work preparing for the greatest event in the history of the company, and almost every visiting body of firemen will have apparatus with them that will be practically a panorama of the strides made in the construction and improvement of fire apparatus during the past half-century. There will be in line the old-time crude hand engines, steam engines and the latest in auto engines.

San Francisco Offers Fire Tug to Oakland

Oakland, Cal.—At a meeting of the Fire Commissioners the secretary was instructed to communicate with the San Francisco Fire Department regarding the offer of Chief Murphy to assist Oakland with the use of the fire tug from across the bay in time of front fires. A signal is to be arranged so that San Francisco will know when the tug is wanted on this side.

Fireproof Buildings for Florida Town

Macclenny, Fla.—Town Council has passed an ordinance to prevent construction of any but fireproof buildings in certain central blocks of the town.

GOVERNMENT AND FINANCE

Mayor Asks Civil Service Changes

Boston, Mass.—Owing to the rejection by the Civil Service Commission of his nominee, former Mayor Hibbard, as City Collector, Mayor Fitzgerald will propose to the Legislature an amendment to the city charter, taking away from the Civil Service Commission the authority to approve appointments and give it to the City Council. Another amendment drawn up as an alternative to this is that when the Civil Service Commission have doubts as to a nominee's qualifications they shall give him and the Mayor a notice to that effect and an opportunity for a hearing. In case of the rejection of a candidate the Mayor would have the reasons stated in writing.

How Commission Plan Works

Kansas City, Kan.—The Commissioners of Kansas City, Kan., were given a dinner last week by the Men's Brotherhood of the First Congregational Church in that city. Each Commissioner told of the condition of the affairs of his department. "A good example of the way in which the commission form of government has facilitated the transaction of business is the quick result that a party of citizens got yesterday when they asked for a street improvement." Otto Anderson, Commissioner of Streets and Public Improvements, said: "They came to me yesterday morning and the improvement was made to-day. I used to be a member of the streets and grades committee in the old council and I know that under the old system the petition wouldn't have been out of the committee for a week. The quick result was obtained because one man had the power to act and the responsibility to bear if the work was not done. There is only one way to govern a city successfully, and that is to take it by the ears and yank it out of the mire of partisan politics." Henry Dean, Commissioner of Parks and Public Property, said: "The change will have to be made gradually, but I expect to see commission government accomplish the reform. We have taken steps in that direction, unsatisfactory as they have been to us, but we can see our way out."

Petitions Circulated to Recall Mayor

Ardmore, Okla.—For the first time in Oklahoma under the commission form of government an attempt is being made to remove a Mayor by the recall. Petitions are being circulated to oust J. A. Cotner, Mayor of Ardmore. Cotner said that if the recall is perfected he will be a candidate for re-election.

Commission Government Notes

Frederick, Md.—By authorization of the Business Men's Association, a meeting is to be called to make plans for the preparation of a new city charter by studying different systems of municipal government in successful operation elsewhere.

McAlester, Okla.—Mayor Quilty has issued a proclamation calling a special election for May 26 to vote on the adoption of the new charter providing the commission form of government.

San Antonio, Tex.—The Charter Commission of the Commission Government League, of which C. A. Greets is Chairman, is drafting a charter which is to be voted on by the citizens June 7. It will follow most closely the Des Moines and Fort Worth plans and will embody the best features of the commission forms.

STREET CLEANING AND REFUSE DISPOSAL

Asbury Park Demonstrates Ability to Cope with Dust

Asbury Park, N. J.—The campaign for dustless roads in Asbury Park was opened last week by an imposing parade of the city water wagons under the auspices of the Street Department. The parade was headed by a band of 20 pieces and, while none of the officials were prominent on the wagons, it is stated that several offered to serve as object lessons provided others whom they thought ought to sit on the wagons consented to do so for the edification of the public. Aside from the moral lesson contained in the unique procession the Street Department was able to disclose its ability to cope with the dust situation in Asbury Park under the most distressing conditions. The parade led to a request for a similar demonstration by the boroughites of Ocean Grove.

By-Products Company Refuses to Receive Garbage

Bridgeport, Conn.—The Bridgeport By-Products Company has notified the city that it will accept no more garbage. Until some better solution of the problem is found, the garbage collector will bury the material on the poor farm at a charge of 50 cents a load, the price paid the company for final disposition. The city will sue the company, which has given a bond of \$10,000 guaranteeing the performance of the contract for four years more. The company's reasons for throwing up the contract, as stated in a letter by the President, J. B. Livingston, are that the city has violated its part of the agreement in delivering to the plant large quantities of all sorts of rubbish, a proceeding which has caused the company trouble, expense and numerous breakdowns. He goes on to say:

Furthermore, all the nonsense about the plant losing money can be easily settled by a public accountant. We did not lose money last year, and to back up what I say, if the city should buy the plant, and would put in \$15,000 to increase its capacity so as to have extra machinery for breakdowns (if they will not keep out the rubbish), I will state that I could manage the plant for nothing, taking the profits for my salary. As I am a high salaried man, it is fair to assume that I know what the plant will do.

Water Board Adopts Waste Paper Rule

Jersey City, N. J.—President Rooney and Commissioner Carlock, of the Street and Water Board, have taken up with Garbage Contractor Henry Byrne the trouble over the littering of the streets with waste paper. The trouble is specially acute in the lower Newark avenue business district, where the street is filled with waste paper after the Saturday night trade. The Commissioners have arranged with Contractor Byrne to send out special wagons to gather up the waste paper. Commissioner Carlock says:

"The time has come when the Board must adopt means to end the waste paper nuisance. Store keepers would be able to help a great deal if they tied up waste paper, instead of permitting it to be blown away from the ash barrels. We have decided to ask store keepers to observe this rule."

Spring Cleaning in Kansas City

Kansas City, Mo.—Superintendent of Street Cleaning Griffin, preparatory to the spring clean-up, issued a notice that he would employ all teams fulfilling certain requirements that reported on time at the street department barn. The teamsters were required to have tight wagon beds, 30 inches high, nine feet long, of standard width. Householders and property owners were asked to co-operate even more than they had hitherto and to burn all combustible rubbish. Referring to vacant lots he said it was essential that they be cleaned up before the weeds, now growing rapidly, cover up the refuse. This removes all obstacles to the operation of the machine mowers used later in the season to cut the weeds.

Incinerator Plant Impresses Official Visitors

Milwaukee, Wis.—City Engineer Marsden Manson, San Francisco, Cal., and Prof. C. D. Marx, dean of the engineering college, Leland Stanford University, who came to Milwaukee to inspect the new refuse incinerator one day last week, said that Milwaukee's plant was the best in existence. They were greatly interested, and will recommend the erection of a similar plant in San Francisco. A Southerner attracted to Milwaukee by the refuse incinerator is Ald. Charles F. Moritz, Chairman of the Council Finance Committee, Montgomery, Ala.

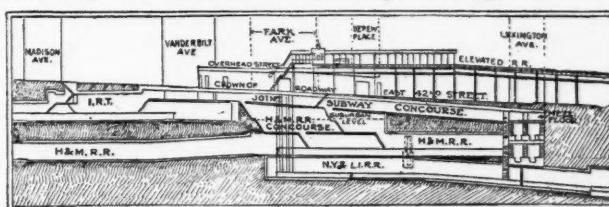
RAPID TRANSIT

Subway Traffic Increasing

New York, N. Y.—The Interborough Rapid Transit reports that 467,848,217 passengers were carried in its subway trains in the 10 months between July 1, 1909, and April 30, 1910. This is an increase of 42,168,105 over the number carried in the corresponding period of 1908 and 1909. The result of the gain in traffic is shown in the company's financial statement for the 10 months. The gross operating revenue for the period was \$24,094,852, an increase of \$2,000,000 over 1908, while operating expenses amounted to \$9,148,533. The deduction of taxes, \$1,429,488; interest and rentals, \$8,791,071, and dividends, \$2,625,000, left a surplus of \$2,450,485.

Terminal with Four Subway Levels

New York, N. Y.—Four stories of underground rapid transit lines will be connected by elevators and a general concourse at the Grand Central station, in Forty-second street, between Lexington and Park avenues, if plans submitted by the New York Central Company are approved by the Public Service Commission. The terminal will be practically the same as a four-story building, with trains



FORTY-SECOND STREET PROFILE OF PROPOSED SUBWAY RAILWAY TERMINAL CONCOURSE

along each floor. The street between building lines to a depth of sixty feet will be excavated. Ira A. Place, Vice-President of the New York Central Company, outlined the plan to the commission and stated that the work had progressed to the point where official approval had become necessary. He suggested that in order to carry out these plans it would be well to establish the station of the Broadway-Lexington avenue subway in Forty-second street instead of in Forty-fifth street. The location of the Steinway tunnel station also was discussed and the remark made that perhaps it would have to be relocated. Mr. Place asked that a conference of all the interests affected be arranged. A general concourse or platform is to be built on the second level, occupied at present by the Interborough subway. This would enable passengers to pass from the cars of one line to another line or to the suburban trains of the New York Central Railroad. On the third level will be the trains of the Broadway-Lexington subway, and the McAdoo lines will take the fourth level below the street, with the Steinway tunnel from Queens under the East River. Large elevators are to be located at Lexington and Park avenues, connecting with each level. It is planned to make underground connections with nearby hotels.

Traffic Regulations for Street Cars Also

Dayton, O.—The traffic ordinances are to be amended so as to give the police power to stop street cars as well as vehicles at the intersections. All the congestion at the street corners, caused when one street car attempts to shoot around the curve and onto a new street in front of another car which is making a similar attempt, will be ended by the ordinance. The policeman on the beat will act as referee in the matter. The ordinance will also regulate the position of vehicles on the street. When passing vehicles going at a more rapid rate the vehicles should keep close to the curb. Violations of the ordinance will be punished by a fine of not more than \$50 or less than \$10.

Whole Trolley Line Seized By Sheriff

Seattle, Wash.—The plant and street cars of the Seattle Electric Company were seized by deputies of the Tax Collector last week because the corporation refused to pay the county \$167,000 taxes. The car barns were taken possession of first, and then the deputies went into the streets and seized cars wherever they were found, and ousted crews and passengers. Not a car was left running.

MISCELLANEOUS

Dogs Must Be Tagged

Alexandria, Ind.—Dog owners must at once provide their dogs with tags, as called for by the new city ordinance, or they will be placed in the city pound and disposed of if not claimed within two days by their owners and the costs in the case paid. To stimulate the gathering in of untagged dogs, the Chief of Police will pay fifteen cents for each untagged dog delivered to him, and the industry of catching untagged canines promises to become a profitable one for boys, as only about fifty tags have been issued by the City Clerk and there are several hundred dogs in the city.

Mayor Would Save Trees

Baltimore, Md.—Following the positive instructions of Mayor J. Barry Mahool that no trees should be cut in Eutaw Place, near Lanvale street, City Engineer Fendall has ordered the work of preparing the foundation for the Key statue to be discontinued. The statue when completed will be in a boat which will appear to be floating in the fountain. In order to make 18-foot driveways around the fountain it would be necessary to cut into the parkway in the center of Eutaw Place and to chop down eight trees.

New Uniforms for the City Park Band

Baltimore, Md.—The City Park Band during the coming summer will appeal not only to the musical ear of the community, but to the esthetic eye as well, judging by the contract which has just been awarded for the new uniforms. These uniforms will be "stunning" in every sense of the word, and the uniform of the leader of the band will be adorned with velvet and gold braid, with gold oak leaves embroidered on velvet around the collar and cuffs. His hat will have an eagle embroidered in gold on the front and oak leaves embroidered on velvet around the band, in addition to an oak leaf embroidered on the visor in gold. The contract for these uniforms has been awarded to Isaac Hamburger & Sons, who were in competition with a Philadelphia uniform house.

Bill Board Ordinance Requires Neighbors' Consent

Buffalo, N. Y.—A pending ordinance forbids the erection of bill boards over 6 feet high without the consent of all property owners or residents within 200 feet of the site of the boards.

Survey Made of Charleston Trees

Charleston, S. C.—A survey of shade trees on the streets of Charleston by the Natural History Society has been made and a report made as follows: The elm tree was found to be most abundant, and for the most part not fitted for the best results. Their general condition was bad. The Carolina poplar was next in abundance. It is an undesirable tree. Sycamores, sugarberries, the live oak and the laurel oak were found to be plentiful and in good condition. High recommendations were given the live oak and the laurel oak. Maples, water oak, paper mulberry, palmetto, ailanthus, weeping willow and magnolia trees were reported on in the report.

Drinking Cups for Dogs

Chicago, Ill.—One thousand drinking cups for dogs will be placed in different parts of the city to lessen the danger of rabies during the hot months. This unusual method of combating mad dogs is the scheme of Dr. John Miller, who obtained the consent of the Judiciary Committee of the City Council to place the drinking cups. "I believe it will tend to lessen the danger of rabies at least 50 per cent," said Dr. Miller.

Stable Ordinance Applied to City Building

Duluth, Minn.—Council recently passed an ordinance forbidding the erection of stables in residence blocks, and last week, when the city applied for a permit for the erection of an addition to a fire house for a horse hospital, Deputy Building Inspector Adolph Anderson refused to grant it. The contract has already been let for the building but work cannot begin unless the law is amended, it now prohibiting stables from housing more than four head of cattle or horses.

Campaign for Art Stirs Montclair

Montclair, N. J.—There is every indication that the opposition to adopt the town plan and art commission act in Montclair will result in a lively campaign up to the date when the issue will be decided, Thursday, May 26. The Montclair Municipal Art Commission, which is behind the movement to have the provisions of the enactment approved by the citizens, has about completed the distribution of the handsome book which contains the report of the landscape architect, John Nolen, and the recommendations of the commission itself to the people of the town, and while these reports and recommendations were intended to illuminate the proposition, there is hardly any doubt that they have beclouded the issue to quite a few of the voters, who, alarmed by the portentous figures contained therein, have come to the conclusion that the commission contemplates the expenditure of millions and that they will suffer from an onerous burden of taxation. The sum of \$5,000,000 has been mentioned as an amount sufficient to accomplish all that has been planned.

Metropolitan Park System for Montreal

Montreal, Que.—Plans to develop the natural beauties of the country about Montreal and Quebec are being prepared, and it is likely that boards modeled on Boston's Metropolitan Commission will be created. Dr. Finnie, one of the members for Montreal city, has presented in the provincial Legislature a resolution stating that measures should be taken to appoint a commission for Montreal city and the surrounding municipalities to establish a system of parks, amusement grounds, and boulevards and improved means of communication.

Plans Flower Market for City

New York, N. Y.—Comptroller Pendleton is taking steps looking to the establishment of a flower and plant market in this city similar to such markets in London, Washington, Milwaukee and other cities. It is planned to establish the new market under the Manhattan approach to the Queensborough Bridge, at First avenue, between Fifty-ninth and Sixtieth streets. It is figured that such a market would bring revenue of from \$12,000 to \$15,000 a year into the city. The Board of Aldermen will be asked to pass a resolution authorizing the establishment of the market.

Clean City for Holiday

Portland, Ore.—Chief of Police Cox has issued an order directing members of the Department to rigidly enforce the ordinances requiring property owners to keep their premises clean. The Chief's idea is to have a spotless town for the Rose Carnival.

San Francisco to Hold Exposition

San Francisco, Cal.—Official sanction of the city government for the Panama-Pacific Exposition in this city in 1915 was given last week, when the Board of Supervisors adopted a resolution authorizing the Mayor of the city to announce to the world that San Francisco would hold the exposition and to invite all the world to come.

Seattle May Have Colossus

Seattle, Wash.—The erection of a colossal statue of Chief Seattle, standing on an immense globe and holding aloft a torch, indicating welcome and hospitality to the nations of the world whose ships enter Elliott Bay, is the suggestion submitted to the Chamber of Commerce of Seattle, says the "Post-Intelligencer." The idea is to have the statue erected on a scale similar to the Statue of Liberty in New York. Dr. Potter said that many prominent citizens who have seen the sketch approve the conception and approve its erection. The chamber voted to give Dr. Potter a hearing, at which she will present her design and go more into detail concerning her suggestion.

Speed of Trains Regulated

South Bend, Ind.—According to a new ordinance, steam and electric trains traversing private right-of-way may run at a speed of 25 miles an hour across streets and alleys within the city limits. Those using tracks running lengthwise of streets will have to observe the speed ordinance providing for a limit of 8 miles an hour.

LEGAL NEWS

A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities

Water Purification—Efficacy of Chloride of Lime

Mayor and Aldermen of Jersey City v. Jersey City Water Supply Company.—The plan contemplates the addition to the water as it is discharged from the reservoir into the pipe leading to Jersey City, of a minute quantity of bleach or chloride of lime. Without attempting to describe the chemical changes, it is sufficient to say that it is established by the proofs, that hypochlorous acid is produced almost immediately and that the oxygen contained therein seizes upon and destroys organic matter in the water. The device includes tanks in which the solution of the bleach is made by stirring, the power being obtained by the water in the reservoir. The solution when pumped into another tank is discharged through an aperture which may be increased or diminished in size, into the water flowing in the pipe. The operation requires the attention of skilled workmen to determine the chemical value of the bleach employed, the amount to be applied and the continuous operation of the plant. Much of the operation is automatic, but some of it, and that the most important part, must depend upon the action of the men in charge. In this respect it is similar to the operation of filtering plants when used for the purification of water. From the proofs taken before me, of the constant observations of the effect of this device, I am of opinion and find that it is an effective process which destroys in the water the germs, the presence of which is deemed to indicate danger, including the pathogenic germs, so that the water, after this treatment, attains a purity much beyond that attained in water supplies of other municipalities. The reduction and practical elimination of such germs from the water was shown to be substantially continuous.—Report of Master of Chancery in New Jersey.

Defective Streets—Sufficiency of Notice

City of Pueblo v. Babbitt.—Where the notice of injury recited that it occurred on the east side of an avenue between Thirteenth and Fourteenth streets, whereas it occurred on the avenue between Twelfth and Thirteenth streets, and the evidence showed that, shortly after the service of the notice, counsel for plaintiff advised the city attorney of its inaccuracy, and the city attorney and city engineer examined the defective avenue between Twelfth and Thirteenth streets, the notice was sufficient.—Supreme Court of Colorado, 108 P. R., 175.

Water Rights—Public Lands

Los Angeles Farming & Milling Company, Plff. in Err., v. City of Los Angeles.—The contention that the disposition of the public lands by the United States is interfered with by a judgment awarding a municipality rights in the waters of a stream paramount to those of riparian owners, which rests upon the effect of the Spanish and Mexican laws governing the rights of a pueblo of which the municipality is the successor, and the subsequent confirmation thereof under the Federal laws, is too clearly unfounded to serve as the basis of a writ of error from the Federal Supreme Court to the State court rendering such judgment.—United States Supreme Court, 30 S. C. R., 452.

Sidewalk Construction—Fraud

Eiermann v. City of Milwaukee et al.—Where a city in exercise of the police power undertook to build a walk at the expense of an abutting owner, and contracted for a substantial walk, it assumed the duty to protect him from being plundered, and it is bound to dictate to the contractor how it should be built, though by this it is not meant that technical deviations from the contract should defeat the assessment, but, when a walk is so defective in construction that a reasonable man cannot honestly say that there is substantial performance of the contract, its acceptance is a legal fraud on the property owner, and he is entitled to relief against the unjust charge.—Supreme Court of Wisconsin, 126 N. W. R., 53.

Supplying Water to City—Exclusive Franchise

Pennsylvania Water Co. v. City of Pittsburg et al.—A change in the form of government of a community does not ipso facto abrogate pre-existing law, either written or unwritten. Where a borough by ordinance granted, without limit of time, the right to a water company to construct and operate waterworks within the borough limits, and to lay pipes to supply water to the borough and its inhabitants, and the ordinance was accepted and acted upon by the company, it constituted a contract between the borough and the company to supply water to the public and exhausted the borough's power to supply itself with water or to construct its own waterworks so long as the company continues to furnish a suitable supply, regardless of whether the company was given an exclusive privilege, and the contract binds a city annexing the borough and agreeing to recognize all contracts for the supply of water made by it.—Supreme Court of Pennsylvania, 75 A. R., 945.

Control of Streets—Cutting Down Shade Trees

Remington vs. Walthall et al.—In the exercise of their delegated powers to grade and improve streets, municipal authorities are vested with discretion to determine whether growing trees are nuisances and what obstructions shall be removed; and, when their decision is made, every reasonable intendment of good faith should be indulged, but an arbitrary decision by an officer, not made in good faith, that shade trees of an abutting owner are a nuisance, when in fact they are not, and where there is no reason or public necessity for cutting them down, is no protection or defense to the officer who cuts them down, when an action is brought against him to recover for the injury and loss. It is competent for the City Council to pass a resolution, directing the officers in charge of the grading of a street not to cut down certain shade trees, until such action has been authorized by the Council.—Supreme Court of Kansas, 108 P. R., 112.

Defects in Streets—Proximate Cause of Injury

Braatz vs. City of Fargo.—Plaintiff, while walking on the sidewalk along the south side of Front street where it intersects with Eleventh street, in the city of Fargo, became frightened by the whistle of a bicycle rider, who approached suddenly from the rear, and she, without looking, stepped off such walk and into a drainage ditch or gutter, which ran under such sidewalk at that point, receiving injuries. In an action against the city to recover damages for such injury, she alleges that such city was guilty of culpable negligence contributing to cause her injury, first, because it suffered weeds to grow in and about such ditch to such a height as to obscure the same from view; and, second, in not placing a cover over such ditch or a railing or guard along the edge of the walk at said point. Held, that from plaintiff's own testimony it appears that the presence of the weeds in no manner contributed, either proximately or remotely, to plaintiff's injuries, she testifying, in effect, that she did not look where she was stepping, and hence was not misled or deceived as to the dangerous character of the place where she stepped by reason of the presence of such weeds.—Supreme Court of North Dakota, 125 N. W. R., 1042.

Defective Streets—Constructive Notice

Olmstead vs. City of Red Cloud.—In an action against a city for injuries from a dangerous stairway in a sidewalk, proof of the city's actual notice of the dangerous condition of such stairway was not essential to plaintiff's right to recover, where there was undisputed evidence that such condition had existed for a length of time sufficient to charge the city with notice.—Supreme Court of Nebraska, 125 N. W. R., 1102.

Killing Dog—Justification

State v. Clifton.—A police officer of a town, charged with the duty of executing valid ordinances thereof, may justify the killing of an unmuzzled dog found at large in violation of an ordinance prohibiting the running at large of unmuzzled dogs, though the provision of the ordinance authorizing the killing of such a dog by any citizen is too broad.—Supreme Court of North Carolina, 67 S. E. R., 702.

NEWS OF THE SOCIETIES

American Society of Civil Engineers.—The program for the forty-second annual convention, Chicago, Ill., June 21-24, has been announced as follows:

Monday, June 20th.—An informal reception will be held during the evening at the Congress Hotel, in order to enable those who arrive early enough to become acquainted with the Chicago membership and with each other.

Tuesday, June 21, 10 a. m. First Meeting—John A. Bensel, President, will deliver the Annual Address, at the close of which the Business Meeting will be held. The business to be considered will be as follows: (1) The Time and Place for holding the next Annual Convention. (2) Report of a Special Committee appointed to formulate the general lines which should be followed in legislation affecting the practice of engineers. (3) Report of the Board of Direction in the matter of a proposed Special Committee to report upon the Preservation of Wood. 2 p. m.—Automobile drive through part of the Park System of the City of Chicago, the entire party being guests of the local membership. 8:30 p. m.—Second Meeting—This will be held either in the Florentine Room of the Congress Hotel, or in Fullerton Hall of the Art Institute. Alfred Noble, Past-President, Am. Soc. C. E., will describe the New York Tunnel Extension of the Pennsylvania Railroad, illustrating his description with lantern slides.

Wednesday, June 22d.—The day will be devoted to a visit to the new steel plant of the United States Steel Corporation at Gary, Ind., the party leaving Chicago at about 9:30 a. m., either by special train or by steamer. Luncheon will be served during the trip. The steel plant will be inspected, and those who are especially interested will be given an opportunity to inspect the water-works, sewerage and other municipal improvements of this new city. The return to Chicago will be about 4 p. m. 8:30 p. m.—Third Meeting—J. Waldo Smith, M. Am. Soc. C. E., will address the Society on the subject of the New Water Supply for the City of New York. The address will be illustrated by lantern slides.

Thursday, June 23d.—For this day a number of short excursions to local points of interest will be arranged. Parties will be made up according to individual preference, and will be personally conducted. The following trips will be arranged for: 1—Excursion to Lockport, to inspect the Regulation Works and Power Plant of the Sanitary Canal. 2.—Visit to the Chicago and Northwestern Railway Passenger Terminal now under construction. 3—Inspection of the plant of the Commonwealth Edison Company. 4—Visit to the new Mail-Order Plant of the Sears-Roebuck Co. This is one of the largest mail-order houses in the world, there being about 8,000 employees. The sanitary arrangements in connection with this plant are especially interesting, as also are the arrangements for filing and shipping orders, which often aggregate 250,000 per day. 5—Visit to the new plant of the Western Electric Co. 8:30 p. m.—Fourth Meeting—An illustrated lecture will be delivered descriptive of the plans recently perfected for beautifying the City of Chicago. After adjournment of this meeting members are invited to a Smoker at the Chicago Engineer's Club.

Friday, 10 a. m., June 24th—This day will be devoted to an excursion. The party will first visit the Army Post at Fort Sheridan, and will then inspect the new Naval Training School at Lake Bluff. Luncheon will be served during the trip, and Ravinia Park will be reached early in the evening. Here dinner will be served and there will be a concert, and probably informal dancing.

General Notes.—The privileges of the Chicago Engineers' Club (First National Bank Bldg., 15 Plymouth Place) have been, by special resolution, extended to the membership of the Society attending the Convention, and it is understood that rooms may be secured at this Club. Golf—for those who are interested in golf, facilities for playing at any time on the various courses in the vicinity of Chicago will be provided, and a half-day tournament will also be arranged on Friday, June 24th, which will form part of the excursion on that day, the golfers playing on a course in the vicinity of Ravinia Park, and joining the party in time for the evening entertainment at that point.—Chas Warren Hunt, Secretary.

Boards of Health of Ohio.—The eleventh annual conference will be held in Cleveland, June 30-July 1. There will be two sessions the first day and one on the second.

National Paving Brick Manufacturers' Association.—The regular quarterly session of the board of directors of the National Paving Brick Manufacturers' Association was held in the office of the secretary, W. P. Blair, in the Board of Trade building, Indianapolis, Ind., May 10. Much of the session was devoted to a discussion of ways and means of arousing greater interest in brick pavements throughout the country and of methods of inducing proper authorities to revise specifications to provide for a better grade of brick pavements. Many Indiana members of the National Association are advocating an amendment of the Thornton paving law, which they say has a tendency to decrease improvement work. Objectionable features are said to be the fact that the cost of paving street and alley intersections is assessed against the cities, whereas many cities have reached the limit of their bonded indebtedness and can not meet the expense of intersections from their general funds. There is also some agitation in favor of a law that will permit brick pavements to be built in the rural districts, the present law providing only for crushed stone or gravel improvements.

Texas State Firemen's Association.—The thirty-fifth annual convention of the association was held at Temple, May 12. Ballinger was chosen as the place for holding the next convention. The following officers were elected:

President, W. T. Hunt, of Dublin; vice-presidents, J. S. McKinney of McKinney; H. W. Spreckles, of Lagrange; I. B. Warren of Belton; P. Schramm of Taylor; corresponding secretary, W. P. Walker, of Luling; recording secretary, J. Ed Smith, of Dallas; assistant secretary, W. L. Talbott, of San Marcos; treasurer, James L. Storey, of Houston, re-elected for the twenty-first time; chaplain, Rev. Father P. A. Heckman, of Temple; delegate to National Convention, Tom S. Wright, of Temple.

Western New York Volunteer Firemen's Association.—The tenth annual convention will be held in Lockport, July 26-27. John R. Mahaney, Lockport, is president and Sheriff Charles F. Foley is secretary of the association. Lockport was the first convention city of the association, which embraces ten counties. There will be at least 60 companies and 30 bands in line on the firemen's day.

League of Kansas Municipalities.—The conference took place at Wichita, May 14, and the following program was carried out:

Wednesday, May 18. Meeting called to order by Mayor C. L. Davidson of Wichita at 10 a. m. Address, "The Value of a League of Municipalities," Frank G. Pierce, Marshalltown, Ia. Organization and consideration of the question of forming a State League of Kansas Municipalities. Address, "Needed Legislation Affecting the Cities of Kansas," Mayor G. W. Allaman, Atchison. Address, "Bureau of Municipal Information," Prof. R. R. Price, University of Kansas. Address, "Municipal Ownership Under Commission Government," ex-Mayor W. A. Miller, Anthony. Address, "Relation of the State Department of Health to City Officials," W. J. V. Deacon, State Department of Health, Topeka. Roll call of the cities. Report of the committee on constitution and organization of the league. Dinner to the visiting delegates at the Country Club at 6:30 p. m.

Thursday, May 19. Address, "The Relation of the City to Its Public Service Corporations," H. P. Wright, Kansas City, Mo. Address, "City Accounting," Commissioner G. C. Glynn, Iola. Address, "Proposed Changes in the Commission Government Laws," Mayor F. L. Martin of Hutchinson. Laying of the corner stone of the Wichita auditorium at 11 a. m. Luncheon to the visiting delegates at the Wichita Chamber of Commerce at 12:30 p. m. Address, "The Practical Use of the Automobile Engine as a Fire Fighting Apparatus," Fire Chief A. G. Walden, Wichita. Roll call of the cities.

National Municipal League.—The next annual meeting of the National Municipal League will be held in Buffalo, November 14 to 18, at the invitation of the Buffalo Chamber of Commerce. Clinton Rogers Woodruff, North American Building, Philadelphia, Pa., is secretary.

Municipal League of Indiana.—The program for the twentieth annual session, Richmond, June 21-23, has been issued as follows:

Tuesday, June 21, 10 a. m. Reception of delegates by local committee. Registering of delegates and members at the office of the Board of Public Works and distribution of badges, city hall. Two p. m., call to order by the president, Hon. Joseph T. McNary, Logansport. Invocation by Rev. Thomas C. McNary, pastor Second Presbyterian Church, Richmond, Ind. Song by the delegates and audience. Greeting from the city by the Hon. W. W. Zimmerman, Mayor of Richmond. Response by Hon. J. Fred France, ex-Mayor of Huntington. Music. Roll call of cities. Reading of journal of preceding meetings. Application for membership. Payment of dues. Announcement of query box. Announcement of meetings of different sections by the president. "How Should School Boards be Elected and How Controlled?" Hon. Milo Freightner, Mayor of Huntington. Discussion led by Senator F. M. Kistler, ex-City Attorney for Logansport. Eight p. m. Music. "Building of a City," Hon. Thomas C. Knotts, Mayor of Gary. Discussion led by Hon. Lemuel Darrow, Mayor of LaPorte. "Civic Improvement," Mrs. M. F. Johnston, of Richmond. Discussion led by Hon. Finley P. Mount, candidate for Attorney-General, of Crawfordsville, and Prof. Thompson, of Richmond. Ten-minute discussion on city government by Hon. William Dudley Foulke, Mr. Elwood Morris, W. A. Bond and Mr. W. P. O'Neal, ex-member Board of Works. Opening of query box.

Wednesday, June 22, 9 a. m. Report of the meeting of the League of American Municipalities held at Montreal, Can., by Hon. Joseph T. McNary, president, of Logansport. Query box discussion. Report of treasurer. "Is Government by Commission the Best Form of Municipal Government?" Hon. John MacVicar, secretary of the National League of American Municipalities and one of the commission of Des Moines, Ia. Discussion led by Hon. Lawrence Becker, Mayor of Hammond. "Have the Amendments of City's and Town's Laws Been Beneficial?" Senator Will R. Wood, of Lafayette. Discussion led by H. J. Curtis, City Attorney of Gary. "Collection and Disposal of Garbage," Charles R. Johnson, Councilman, of Madison. Discussion led by C. B. Cooper, of Columbus. Two p. m., reports of different sections of the league. Query box discussion. "Sanitation by Commission and Sewage Disposal," Dr. J. N. Hurty, secretary of State Board of Health, of Indianapolis. Discussion led by Hon. A. J. Hammond, ex-City Engineer, of South Bend. "Is it Profitable for Cities to Own and Operate their Own Electric Lighting, Water Works, Gas and Heating Plants, and Should the Cities Grant Franchises to Private Corporations for Same?" Hon. A. M. Gardner, City Attorney, of Richmond. Discussion led by R. R. Johnson, of Logansport. "Public Utility Commission," Hon. John A. Gavitt, City Attorney, of Hammond. Discussion led by R. M. Ashe, of Richmond. "What Part, if Any, Should Cities Pay Toward Track Elevation?" Hon. Henry G. Hogan, City Attorney, of Ft. Wayne. Discussion led by S. L. Shank, Mayor of Indianapolis. "Are the Benefits of the Public Accounting Law Equal to the Costs?" Hon. William A. Dehority, of Indianapolis. Discussion led by Hon. Ernest E. Cloe, City Attorney, of Noblesville. Entertainment of delegates and visitors.

Thursday, June 23, 9 a. m. Query box discussion. "Water Supplies for Cities and Towns," Hon. John Bray, Mayor of Brazil. Discussion led by Hon. A. G. Schlicker, Mayor of East Chicago. "Should District Workhouses be Established and if so, How?" Hon. B. H. Campbell, City Attorney, of Elwood. Discussion led by Hon. J. L. Puckett, Mayor of Kokomo. "Should the Constitutional Limitation of Indebtedness of Two Per Cent. be Increased?" Hon. James E. Burke, Mayor of Jeffersonville. Discussion led by Hon. Arthur D. Cunningham, City Attorney, of Lafayette. General discussion of proposed amendments of city's and town's laws. Reports from different sections. Reports of officers. Reports of committees. Election of officers. Selection of next place of meeting. Unfinished business. Adjournment.

Conference of Mayors of Second and Third-Class Cities of New York.—The Advisory Committee has announced that June 23 and 24 will be the dates for the Conference of Mayors of the second and third-class cities that will be held in Schenectady to discuss the municipal administration of matters pertaining to public health. It was also announced that a programme of unusual merit is being arranged and that the committee has been exceptionally fortunate in getting speakers of national and international repute. The committee is now assured that every second and third-class city in the State will be represented by its Mayor and that practically all of the municipalities will send at least two other officials. Plans are now being made for the entertainment of 250 municipal officers, which will be the largest gathering of its kind ever held in this State. The Mayors Committee has received assurance from the Hon. Robert C. Owen, United States Senator from Oklahoma, that he will be present and make an address if his Congressional work will permit. The following have accepted invitations to make addresses: Dr. Harvey W. Wiley, Chief Chemist of the Department of Agriculture, Washington, D. C.; Hon. Homer Folks, Secretary State Charities Aid Association; Lawrence Veiller, Secretary National Housing Association; Dr. Livingston Farrand, Secretary National Association for the Study and Prevention of Tuberculosis; Dr. Frederick L. Hoffman, Statistician Prudential Life Insurance Company; Prof. C. E. A. Winslow, New York City; Hon. Eugene H. Porter, State Commissioner of Health; Dr. Luther H. Gulick, President of National Playground Association; Rt. Rev. Monsignor J. L. Reilly, Schenectady, N. Y.; Rev. George R. Lunn, Schenectady, N. Y., and Prof. Walter F. Wilcox, of Cornell University. The committee is still in communication with other noted State and municipal officials and well-known experts and expects to enlarge the programme. Later prominent Mayors in the State will be asked to discuss the subjects which the speakers will introduce.

Washington Society of Engineers.—At a meeting, May 3, in the Potomac Telephone Bldg., Washington, D. C., about forty members were present. Dr. Charles E. Monroe, George Washington University, read a paper on "Subway, Sewer and Similar Explosions."

American Society of Engineering Contractors.—At the regular monthly meeting, May 10, a paper entitled "An Economical Substitute for a Timber Trestle in Making a High Embankment" was read by J. L. Ingle, Jr., and a discussion was held on the paper entitled "Uniform Cost Keeping Systems" by Gustave Kaufmann. Daniel J. Hauer is secretary of the society.

Public Health Officials of Montana.—At a meeting at Livingston, May 9, the following topics were treated of in papers or general discussions:

"Typhoid Fever in Montana": (a) In relation to water; (b) In relation to general unsanitary conditions.

"Food Supplies": (a) Slaughter Houses; (b) Dairy.

"Individual Experiences in Maintaining Quarantine."

"Health Officer in Relation to the General Practitioner."

"Ventilation of Public Buildings."

"The Importance of Physical Examination of School Children."

Calendar of Meetings

- May 23-28.** **National Electric Light Association.**—Annual Meeting, St. Louis, Mo.—T. C. Martin, Secretary, 29 W. 39th st., New York.
- May 27-29.** **Louisiana State Firemen's Association.**—Fifth Annual Convention, Lafayette.—Wm. J. Kleinpeter, Secretary, Gretna, La.
- May 31-June 3.** **American Society of Mechanical Engineers.**—Spring Meeting, Atlantic City, N. J.—Calvin W. Rice, Secretary, 29 W. 39th st., New York.
- June 1.** **American Society of Civil Engineers.**—Regular Meeting, Society House, New York.—Charles Warren Hunt, Secretary, 220 W. 57th st., New York, N. Y.
- June 1-4.** **Engineers' Society of Pennsylvania.**—Second Annual Convention, State House, Harrisburg, Pa.—Edward R. Dasher, Secretary.
- June 2-3.** **North Carolina Municipal Association.**—Annual Convention, Winston-Salem, N. C.—O. B. Eaton, Secretary, Mayor, Winston-Salem, N. C.
- June 7-11.** **Playground Association of America.**—Fourth annual congress, Rochester, N. Y.—H. S. Braucher, Secretary, 1 Madison avenue, New York City.
- June 9-11.** **National Association of Comptrollers and Accounting Officers.**—Fifth annual convention, Hotel Astor, New York City.
- June 21-24.** **American Society of Civil Engineers.**—Annual Convention, Chicago, Ill.—Charles Warren Hunt, Secretary, 220 W. 57th st., New York City.
- June 22.** **New England Water Works Association.**—June Outing, Providence, R. I.—Willard Kent, Secretary, Narragansett Pier, R. I.
- June 21-23.** **Indiana Municipal League.**—Annual Convention, Richmond.—Baltz A. Bescher, Secretary, Richmond, Ind.
- June 22-24.** **American Institute of Chemical Engineers.**—Semi-annual Meeting, Niagara Falls, N. Y.—J. C. Olsen, Secretary, Polytechnic Institute, Brooklyn, N. Y.
- June 23-25.** **Society for the Promotion of Engineering Education.**—Annual Meeting, Madison, Wis.—Henry H. Norris, Secretary, Cornell University, Ithaca, N. Y.
- June 27-30.** **American Institute of Electrical Engineers.**—Annual Convention, Jefferson, N. H.—R. W. Pope, Secretary, 33 West 39th st., New York City.
- June 30-July 1.** **American Society for Testing Materials.**—Annual Meeting, Atlantic City, N. J.—Edgar Marking, Secretary, University of Pennsylvania, Philadelphia, Pa.
- July 26-27.** **Western New York Volunteer Firemen's Association.**—Tenth Annual Convention, Lockport.—Charles F. Foley, Secretary, Lockport, N. Y.
- August 17-20.** **National Firemen's Association.**—Thirteenth Annual Convention, Rochester, N. Y.—Bert Fisher, Secretary, 3812 Wabash ave., Chicago, Ill.
- August 23-26.** **League of American Municipalities.**—Annual Convention, St. Paul, Minn.—John MacVicar, Secretary, City Hall, Des Moines, Ia.
- August 23-26.** **International Association of Fire Engineers.**—Annual Convention, Syracuse, N. Y.—James McFall, Secretary, Roanoke, Va.
- September 21-23.** **New England Water Works Association.**—Annual Meeting, Rochester, N. Y.—Willard Kent, Secretary, Narragansett Pier, R. I.
- October 11-16.** **American Society of Municipal Improvements.**—Seventeenth Annual Convention, Erie, Pa.—A. Prescott Folwell, Secretary, 239 W. 39th St., New York, N. Y.
- November 14-18.** **National Municipal League.**—Annual Meeting, Buffalo, N. Y.—Clinton Rogers Woodruff, Secretary, North American Building, Philadelphia, Pa.

PERSONALS

ALFORD, HORACE C., Riverside, Ala., has been elected Mayor over his grandfather, James R. Coleman, by a vote of 2 to 1.

BUTLIS, JOSEPH, President of the Street Board of Hartford, Conn., has been re-elected, as has also Clerk George Nivers, while Karl J. Beij has been made Vice-President of the Board.

CALLAHAN, JOSEPH E., New Britain, Conn., has been appointed to the Board of Public Safety, relieving Joseph E. Callahan, who succeeded him four years ago, and Raymond G. Healey succeeds Mr. Hurlburt on the same board.

COWLES, W. P., has been appointed resident engineer of the Minneapolis Civic Commission, which, under the direction of E. H. Bennett, of Chicago, is studying a civic improvement plan for Minneapolis.

CUNNINGHAM, E. H., Captain of Hose of the Fire Department of Lowell, Mass., has been in service 46 years and a Captain 30 years.

CUTCHEON, L. D., Grand Rapids, Mich., has been elected City Engineer by the Board of Public Works; F. G. Wendell, Assistant City Engineer; Fred Stevens, Chief Draftsman, and Adolph Wurzburg, Assistant Secretary of the Board.

DULEY, JEFFERSON M., Chief of Police until deposed recently, has been appointed as desk sergeant by the new Chief, Thomas Malony.

ELIOT, JOHN VISSCHER, Pasadena, Cal., society man and silk importer, has been appointed a member of the Board of Police, Park and Fire Commissioners by Mayor Earley, to succeed William S. Medill, term expired.

FEENEY, MARTIN A., City Engineer of Butte, Mont., has resigned.

GIDLEY, A. B., Lead, S. D., has been elected City Engineer.

GORMLEY, WILLIAM M., Grand Rapids, Mich., has been made Chief Engineer of the combined electric power and pumping station at \$2,100 per year by the Board of Public Works; he is an ex-President of the Board and one of the best-known stationary engineers of the city.

HALL, THALLES P., member of the Board of Park Commissioners of Lowell, Mass., has been reappointed for a five-year term by Mayor Meehan.

HAWKINS, M. O., Mayor of Coquille, Ore., has been defeated for re-election by J. E. Quick, the Socialist candidate, by 15 votes.

JOSLIN, H. V., has been appointed assistant engineer on the investigation now under way for a new water supply for Norfolk, Va.

MCCULLEY, W. D., Brownwood, Tex., has been elected Chief of the Fire Department, which was organized after all members of the old Volunteer Department resigned because of the discharge of a driver.

NORMAN, FRANK, Lead, S. C., has been elected Chief of Police, and William Woolcock, Assistant Chief.

PLUM, CARL E., City Engineer of Elgin, Ill., has been re-appointed.

SHOECRAFT, ELLSWORTH, Coldwater, Mich., has been nominated as City Engineer of Laporte, Ind., to succeed George Burns. The city is now engaged in constructing a \$150,000 sewer system.

SWEET, HENRY L., Estherwood, La., has been installed as Mayor; also Alderman John P. Truge, A. P. Bandreaux and John Broussard.

WILLIAMSON, H. S., Mayor of Lincoln, Cal., has been re-elected by the Board of Trustees; J. B. Pope has been made Superintendent of Streets, and T. B. Harper, Recorder.

MUNICIPAL APPLIANCES

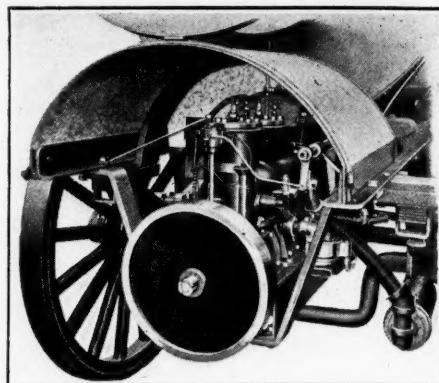
Curb Box for Sprinkler Connection

A CURB box for street sprinkling purposes has been placed on the market by the A. P. Smith Mfg. Co., Newark, N. J. The object of the invention is to save fire hydrants and obviate their use by drivers of street sprinkling carts and others, a use which, as is well known, often results in getting the hydrants out of order, a condition which may not be discovered until they are urgently needed by the Fire Department. This difficulty has been overcome in some cities by a special overhead connection made for street sprinkling use. The Smith device has the advantage that there is no unsightly overhanging pipe and no muddy spot beneath it, due to leakage. A box in the sidewalk, closed by a lid level with the walk contains a hand valve, to be operated by the driver of the sprinkling wagon and a hose connection. In the pipe connecting with the water main is another valve opened and shut by means of a key through a box set in the pavement. This valve would ordinarily be opened at the beginning of the sprinkling season and not closed again until fall. A drip leading to a sewer drains this valve. The device may be installed by means of a new connection with the main as shown in the cut or by means of a branch at right angles with a hydrant pipe connec-

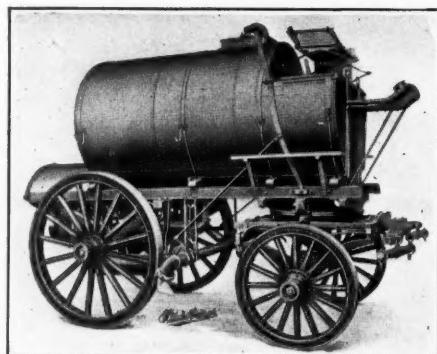
tion, the branch being sufficiently long to allow the box in the sidewalk to be placed at a suitable distance from the hydrant.

Street Flusher

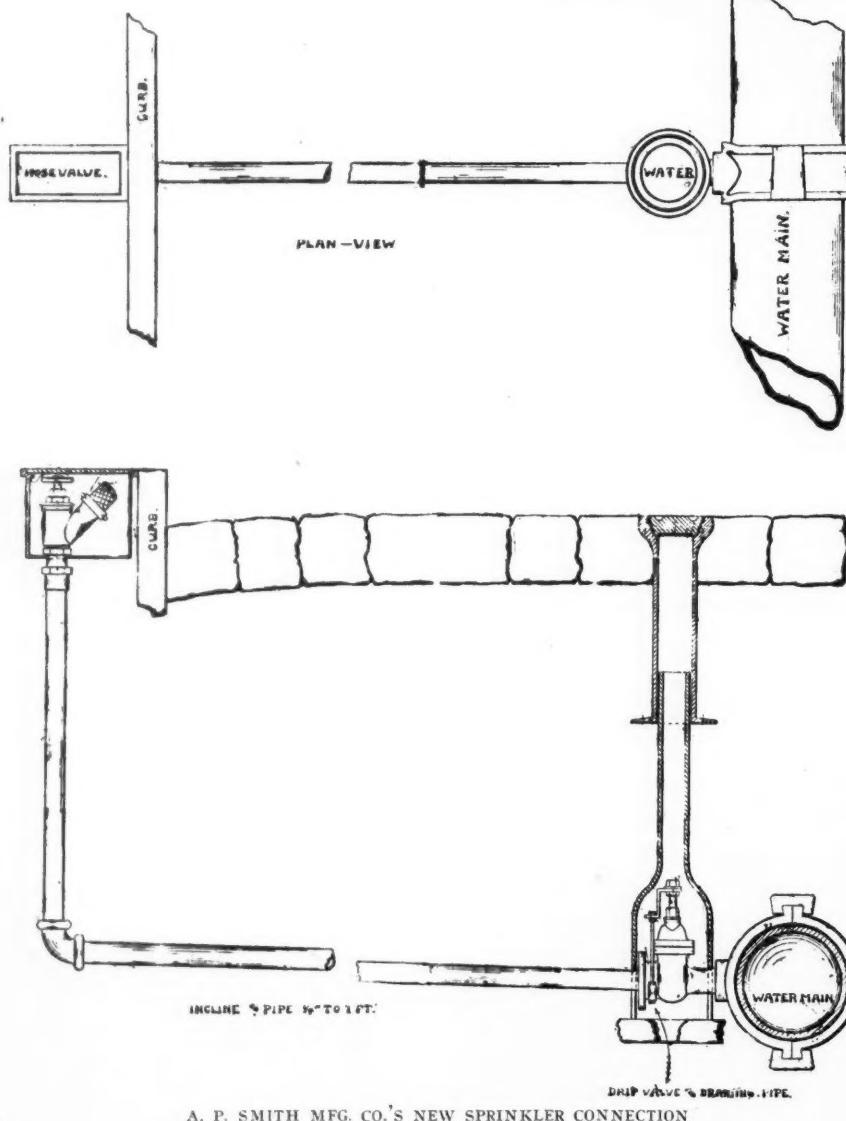
A STREET flushing machine from which water is distributed over the pavement under pressure by a force pump has been put on the market by Studebaker Bros. Manufacturing Company, South Bend, Ind. It consists of a galvanized steel tank having a capacity of 750 gallons, mounted on T steel sills, with truck platform gear, Sarven



ENGINE AND PUMP OF FLUSHING MACHINE



STUDEBAKER STREET FLUSHING MACHINE



A. P. SMITH MFG. CO.'S NEW SPRINKLER CONNECTION

patent wheels, with 4-inch tires and roller-bearing axles. Water is forced into the distributing pipe by a centrifugal pump direct connected to a gasoline two-cylinder engine. The machinery is in the rear of the wagon and covered with a light metal hood to protect it from dust. A uniform pressure varying from 8 to 32 pounds can be maintained until all the water has been exhausted from the tank. The engine is simple in construction, devoid of intricate parts, so that it can be successfully operated by an ordinary driver. The distributing pipe is between the wheels and is equipped with nozzles that can be adjusted to any necessary angle. The nozzle is fully controlled by means of a lever from the driver's seat, as is also the speed of the engine. A dial on the footboard at the driver's seat registers the pressure being obtained.

Sanitary Cup

A SANITARY cup, the invention of Dr. C. N. Thornton, Dalhart, Tex., was exhibited at the recent meeting of the Texas Medical Association and attracted favorable comment. The model consists of a slender framework which supports a receptacle holding an antiseptic fluid, this being the central idea of the inventor. The fluid constantly flows down upon the rims of two inverted drinking glasses, thus keeping them sterilized after each drink of water. The need for such a public drinking vessel, which should be absolutely antiseptic, has long been the despair of health officers, and it is believed by those who saw it that Dr. Thornton's cup offers the successful solution.

Fire Hydrant, Compression Type

THE Kennedy fire hydrants are of the compression type, and are so constructed that in case of any obstruction or occasion arising for examination or repair of any of the internal working mechanism, the internal parts, including the inlet valve and drip valve, may be easily lifted out by one man, without derrick or sling, by simply removing the cap and plate, leaving the standpipe undisturbed, obviating the necessity of digging up the street or disconnecting the standpipe from the water main. This feature is important, enabling examination and replacement or repair of such parts needing it, with the minimum of expense, trouble or delay.

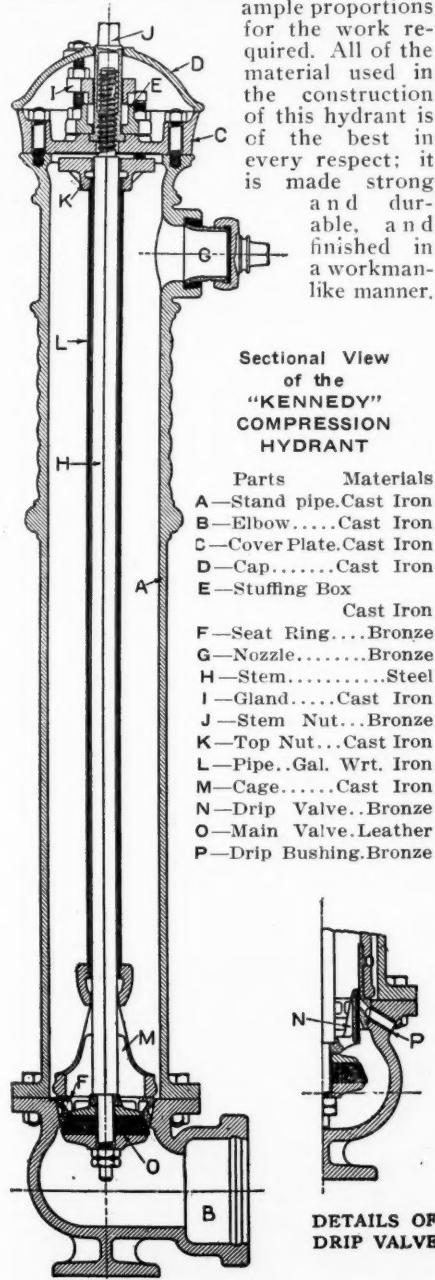
A drip valve, for draining the hydrant of any water that may remain in it after the main valve has been closed, is situated at the lowest part of the standpipe. It is lined with bronze to prevent corrosion, and is positive and

automatic in its action, closed when the main valve is open, and open when the main valve is closed, providing a means of escape for any water remaining in hydrant after use, and thus preventing danger of freezing. This device tends to render a frost case an unnecessary expense.

Standpipes are amply large, being much greater in area than the inlet valve opening, thus practically eliminating loss of pressure through friction.

The Kennedy fire hydrant is made so that the valve closes with the pressure from the main. The valve is made of best quality hydraulic leather, and will at all times make a perfectly tight joint. A valve made of rubber can be furnished, if desired, at a reasonable extra price. The valve seat and the valve being the parts most susceptible to damage or subject to hard usage, makes it essential that they should be readily accessible. The accessibility of these parts is a prominent feature of these hydrants, such parts being easily withdrawn for examination, repair or replacement, and as easily returned to correct position.

Material.—All working parts are of bronze or brass mounted, and are of ample proportions for the work required. All of the material used in the construction of this hydrant is of the best in every respect; it is made strong and durable, and finished in a workman-like manner.



TRADE NOTES

Cast-Iron Pipe.—Chicago: There is a fair run of small lettings and orders from municipalities. Quotations: 4-inch, \$28.50; 6 to 12-inch, \$27.50; 16-inch and up, \$26.50. Birmingham: Orders have kept well ahead of production and producers are not disposed to offer inducements for large contracts. Quotations: 4 to 6-inch, \$24; 8 to 12-inch, \$23; over 12-inch, average \$22. San Francisco: The amount of work projected gives assurance of an active market for the remainder of the year. New York: It is believed that general business may shortly show a considerably increased volume. Quotations: 6-inch, \$25.50-\$26.

Lead.—A slight improvement in demand is noted. Quotations: New York, 4.35c.; St. Louis, 4.20c.

Metal Sidewalk Forms.—Hotchkiss Lock Metal Form Company, Binghamton, N. Y., which was incorporated last December, has been having its forms manufactured at a factory in Carbon-dale. The demand for the forms has been such that the factory has been working night and day to fill orders. The company is contemplating building a factory in Binghamton to manufacture their goods exclusively. A new curb and gutter form will soon be placed on the market.

Graphite.—At a meeting of the Automobile Club of America, May 17, Edward G. Acheson, D.Sc., gave an address on the subject of graphite which he illustrated by samples, experiments and charts showing the results of tests of different lubricants and abrasives.

Engineering Apprentices.—An innovation in the training of engineering students and apprentices, such as are taking courses in the various local works, was brought about last week, when 100 young men from the shops of the Allis-Chalmers Company, at West Allis, Wis., were taken over the route of the Milwaukee Northern Railroad, shown the large gas engine power plant in operation and given an opportunity of inspecting all of the electrical equipment, including that contained in the substations. This practice, it is stated, will be continued, different industries being taken up one by one.

Pumping Engines.—The Holley Mfg. Co., Buffalo, N. Y., has been given the largest order for high-duty pumping engines ever awarded in a single contract. It comprises five vertical triple expansion units having an aggregate rated capacity of 150,000,000 gals. daily, to be installed in the new municipal water works at Buffalo.

Steam Pumps.—The American Steam Pump Company, Battle Creek, Mich., reports an active demand for the Marsh simplex pumps which it is manufacturing. Self-regulating valves are a feature of this type.

Valves.—The Nelson Valve Company, Wyndmoor, Pa., has begun work on the erection of a new steel foundry, pattern shop and pattern storage building, particulars regarding which will be available at a later date.

Culverts.—A new industry just established at Wahpeton, N. D., is that of the Northwestern Sheet Metal & Iron Company, whose products, in addition to what its name implies, will include steel culverts.

Crushing Machinery.—A large gyratory rock breaker has been purchased by the city of Two Harbors, Minn., for a municipal crushing plant. This will lead to other requirements along the same line.

Auto-Chemical.—The Blue Ribbon Auto & Carriage Company, of Cannon street, Bridgeport, Conn., has completed an auto-chemical engine for the Fire Department of Stamford, Conn., of which it is very proud. The chemical is built along attractive lines and is much larger than the one in use in Bridgeport. It is a combination chemical and hose car. The chassis was furnished by the Locomobile company, being a Model 1 chain-driven with a 40-horsepower engine. The balance of the car was built by the Blue Ribbon Auto & Carriage Company. There are two 35-gallon chemical tanks suspended on each side over the rear mud guards. There are two 20-foot extension ladders carried on a rack four feet above the body and the car is equipped with fire extinguishers, lanterns, firemen's axes, and other supplies. It has a capacity of 1,000 feet of hose and will carry six men aside from the driver. It has a long running board at the rear supported by large brass rails. The car is a rich crimson with gold stripes and will cost the city of Stamford \$7,500. The company is building two others just like this one for cities near Boston.

Gas Company Report.—The report of the Public Service Gas Company, Newark, N. J., shows that the company serves 125 municipalities with an estimated population of 1,433,000. The companies formerly operating in this territory, now consolidated with the Public Service Company, charged rates varying from \$1 to \$1.80; these rates are now uniformly \$1. In 1909 the company sold 7,676,874 M. cubic feet of gas. The electrical department of the company make a base rate of 10 cents per kw. as compared with rates by the original companies of from 12 to 18 cents per kw. Rates for public lighting have been reduced to \$75, \$80 and \$85 per arc light, in first, second and third-class cities, respectively. The main generating station at Marion has a capacity of 40,000 kw. The company has 22 other generating stations. The total amount of current sold in 1909 was 79,911,840 kw.

Street Cleaning Machine.—The Monte Street Cleaning Co., 320 Broadway, New York City, have placed on the market a machine which automatically sprinkles, sweeps, picks up and unloads dirt.

White Cement.—The Lily White Cement Company is about to erect a 500-barrel mill at Bethlehem, Pa. Contract for the group of steel frame buildings has been awarded and machinery will be provided shortly.

Traction Engine.—The Ohio Tractor Company, Marion, Ohio, maker of gasoline traction engines, has decided to remain in that city, a large amount of money having been subscribed for stock by citizens of Marion. It is announced that work of making extensive additions to the plant will be started at once.

Crushed Stone.—The Capitol Lime Stone Company, Columbus, O., announces that its new crushing plant on the T. & O. C. Ry. at Columbus will be in operation June 1.

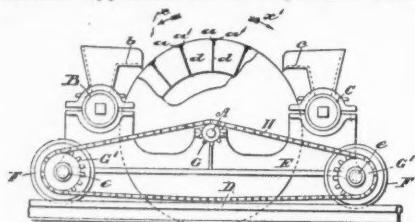
Stone Crushing.—The Buffalo Crushed Stone Co., Buffalo, N. Y., will install an alternating current motor of 250 to 300 hp. for driving a large rock breaker.

Steel Tanks.—The Freeland Steel Tank Company, Portage, Wis., is running full force, with a large amount of work ahead, notwithstanding the fact that it is a comparatively new concern.

PATENT CLAIMS

955,754. SEWAGE-DISTRIBUTOR. Alfred Browning, Old Hill, England, assignor to Walter Jones, Amblecote, England. Serial No. 422,909.

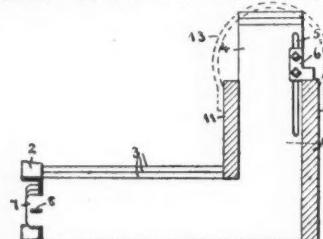
A device of the character described having a carriage adapted to traverse a track, a water-wheel kept in alinement by the carriage and extending substantially across the width of the filter bed and having a series of buckets which are supplied by a conduit appliance which is parallel there-



with and travels with the carriage, means for propelling the carriage in opposite directions along said track from reverse movement of said water-wheel, and means capable of operation first to deliver sewage to the series of buckets of the water-wheel at one side thereof, to drive the wheel in one direction, and afterward to deliver such sewage to said series of buckets of the water-wheel at the opposite side thereof, to drive said wheel in an opposite direction.

955,801. FORM FOR LAYING CONCRETE CURBS AND GUTTERS. Mark S. Hotchkiss, Leestershire, N. Y., assignor to Hotchkiss Lock Metal Form Company, Binghamton, N. Y. Serial No. 490,114.

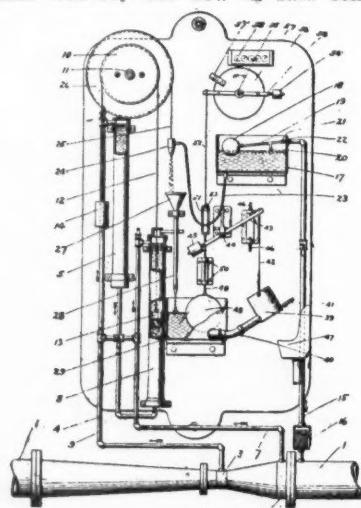
In a form of the character described, the combination, with front and back bars, of an angled division plate having a horizontal member provided with means for engaging the front bar and a vertical member ex-



tending above the back bar and provided with a vertical slot adjacent its rear end, an arm movably mounted on said member and adapted to rest upon the top of the back bar, and means passing through said slot above the back bar for clamping the arm in adjusted position.

956,374. LIQUID-METER. John W. Ledoux, Swarthmore, Pa., assignor to Simplex Valve & Meter Company, Camden, N. J., a Corporation of New Jersey. Serial No. 325,216.

A liquid meter comprising a liquid conduit, a pressure reservoir containing a liquid heavier than that in said conduit, means whereby the flow in said conduit



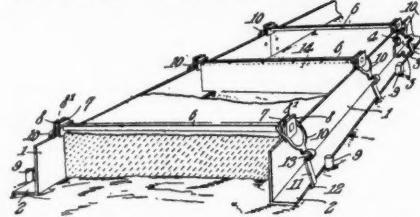
regulates the height of the liquid in said reservoir, a second liquid conduit, and means whereby the height of the liquid in said reservoir regulates the flow through said second conduit.

955,280. HOSE-BRIDGE. Alfred J. Neff, Richmond, Ind. Serial No. 488,170. Renewed Jan. 25, 1910. Serial No. 540,083.

In a hose-bridge, the combination, with two bridge-bars, each having wedge-shaped end portions and a slot for straddling a hose-pipe, of an adjustable brace having its end portions formed of rods pivoted to its main portion and arranged at an angle to each other and provided with means for connecting them to the said bridge-bars on opposite sides of their slots.

955,474. CONCRETE-SIDEWALK FORM. William Ramey and Lewis Chicote, Melvern, Kans. Serial No. 501,328.

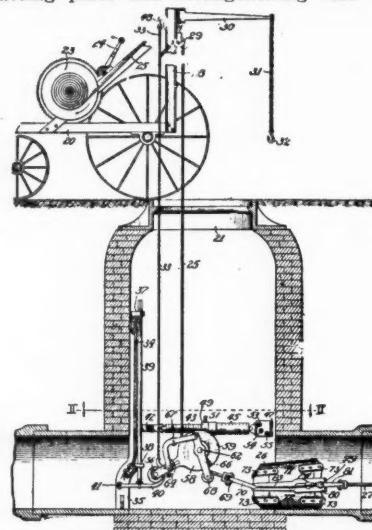
In a means for the purposes described, mold members, a spacing bar or cross tie having spaced heads at each end separated by a spacing block of greater diameter than



the diameter of the spacing bar or tie and adapted to embrace the mold members with the lower edge of the cross bar above the plane of the tops of the said mold members.

955,812. SEWER-CLEANING APPARATUS. John F. Kuhlman, Hammond, Ind. Serial No. 496,033.

In combination in a sewer scraper, a dredging bucket provided with a removable cutting plate and strengthening ribs con-



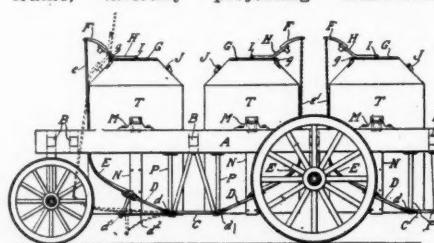
nected to the cutting plate and to the bucket, and having their wearing surfaces lying outside and protecting the outside face of the plate.

956,009. METHOD OF MAKING ROADS. Leonard S. van Westrum, Grand Rapids, Mich. Serial No. 489,662.

The method of building roads, which consists in mixing an asphaltic cement emulsified with an agent whose basis is water, with broken stones, gravel, earth, etc., in their natural condition, and spreading and compacting the mixture on a suitable foundation, substantially as described.

956,053. GARBAGE-WAGON. Edgar S. Dorr and Melville F. Rogers, Boston, Mass. Serial No. 423,161.

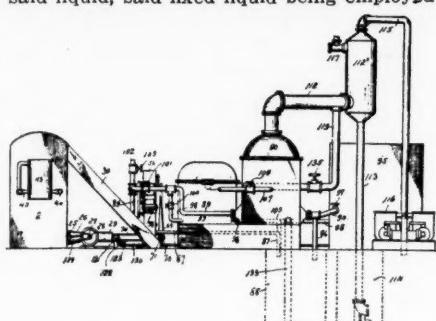
In a wagon for transportation of offensive material, the combination, of a wagon frame, a tank removably supported on the frame, laterally projecting trunnions,



squared in part, on said tank, squared sockets on the frame to receive the squared parts of the trunnions, the cylindrical portions of the trunnions being clear of the supports therefor to admit the introduction of hooks or like lifting means.

956,569. DESTRUCTION OF GARBAGE AND RECOVERY OF BY-PRODUCTS. Walter M. Cross, Kansas City, Mo. Renewed Oct. 23, 1909. Serial No. 524,230.

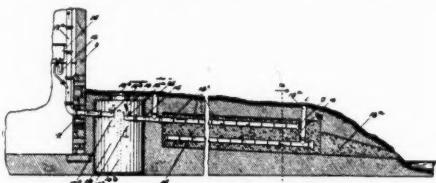
The process consisting in condensing into liquid vapors and gases produced by heating material, such as garbage, then fixing said liquid being employed



for condensing said vapors and gases the heat from which is at the same time employed to evaporate said fixed liquid, said fixed liquid at the time being subjected to a pressure less than that to which said vapors and gases are subjected.

956,665. APPARATUS FOR SEWAGE DISPOSAL. Burton J. Ashley, Chicago, Ill. Serial No. 393,616.

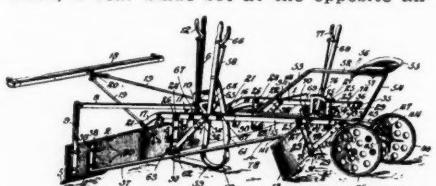
The combination in an apparatus for the purification of sewage, of a perforated pipe or passage buried below the surface of the soil, a body of filtering material in contact with said perforated pipe or passage, the



said perforated pipe or passage communicating with the source of sewage, but closed to the inlet of air except through the filtering material, an air passage communicating with said filtering material and means for exhausting the air from the filter bed.

956,744. ROAD-GRADER. Henry Sunderman, Madison, Neb. Serial No. 517,338.

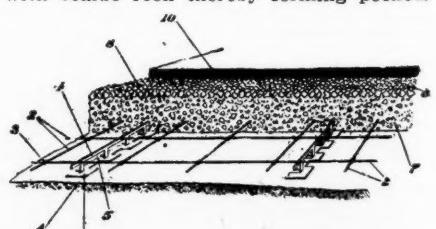
A road grader including a front scraper blade arranged at an angle to the line of draft, a rear blade set at the opposite an-



gle to the line of draft and arranged to counteract the side draft produced by the front blade, and a draft device connected with the front scraper blade intermediate of the ends thereof.

956,940. OILED CONCRETE ROADWAY. Edward M. Chadbourne, San Francisco, Cal. Serial No. 511,169.

The method of roadway construction which consists in preparing a suitable sub-grade and spreading a suitable layer of concrete thereover, and while this concrete is still in a plastic condition covering it with coarse rock thereby forming pockets



in the top-surface thereof, allowing the concrete with its rock coating to set into a solid structure, oiling the surface of the foundation so formed, so as to fill the pockets with oil of asphaltic base, then applying a layer of screening to the oil sufficient to take up the oil, and then subjecting the oiled surface to pressure.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Street Railways—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

STREET IMPROVEMENTS

Huntsville, Ala.—Council has adopted ordinance providing for paving of Eustis st.

Mobile, Ala.—Board of Public Works has instructed Wright Smith, City Engineer, to prepare plans and specifications for paving Broad st.

Montgomery, Ala.—Street Paving Inspector Chas. E. Faber will visit Mobile to inspect creosoted wood block.

Glendora, Cal.—City has decided to build a road across mountains from this city to the upper San Gabriel River; estimated cost \$20,000.

Oakland, Cal.—Board of Supervisors has appropriated over \$53,000 to various district road funds.

Oakland, Cal.—Street Commissioner Howe has recommended that bids be advertised for reinforcing with standard asphalt portions of Twelfth st.

Pasadena, Cal.—South Lake ave. residents are urging paving of that thoroughfare; widening of Broadway, San Pasqual st. and El Molino ave. is being considered.

San Francisco, Cal.—Superintendent John McLaren of Golden Gate Park has announced that work will shortly begin on construction of first section of the concrete wall and well-paved roadway which is to stretch along Pacific frontage of county.

San Rafael, Cal.—Citizens and property owners in and around Kentfield, Escalle and Larkspur, have petitioned Board of Supervisors for construction of road across the marsh from Escalle to Hotel Bon Air.

Venice, Cal.—Boulevard will be constructed to extend for about two miles out of city.

New Britain, Conn.—Mayor Jos. M. Halvoran has recommended that Board of Public Works give center of city immediate attention.

New Britain, Conn.—Board of Public Works is considering building of boulevard between Plainville and New Britain.

Jacksonville, Fla.—Council has adopted resolution calling election on \$100,000 bonds for paving streets.

Jacksonville, Fla.—Duval County Commissioners have instructed County Engineer Gail L. Barnard to prepare grades and estimates for pavements to be laid on several county roads.

Pensacola, Fla.—Citizens will vote June 14, on \$150,000 additional paving bonds.

Dalton, Ga.—Citizens have voted \$25,000 bonds for street paving.

Lafayette, Ga.—Walker County Commissioners will extend road from Lafayette to Chattooga county line, and Chattooga County Commissioners, Summerville, will continue road to Floyd county line.

Savannah, Ga.—City will expend \$5,000 for sidewalk paving.

Bloomington, Ill.—Council has passed ordinances for paving number of streets at cost of \$60,000.

East St. Louis, Ill.—Council has authorized improvement of Alhambra Court; cost \$42,000.

Marshall, Ill.—Council has passed an ordinance providing for construction of seven blocks of additional pavements; cost \$19,661.

Moline, Ill.—Paving of 8th ave. is being considered.

Pekin, Ill.—Council is considering paving of Third st. place with brick.

Peoria, Ill.—Council has passed ordinance for paving Ellis st. and Garfield ave. with brick and for resurfacing Perry ave. with asphalt; cost of paving Adams st. with creosoted wood block has been estimated at \$41,307.90.

Bedford, Ind.—Plans and specifications have been prepared for paving of 16th st.—J. W. Malcott, City Engineer.

East Chicago, Ind.—Citizens have asked for paving of Canal st. and extension of Chicago ave.

Elkhart, Ind.—Paving of Main and West Simonton sts., distance one mile, is being considered by Board of Works.

Evansville, Ind.—County Council has appropriated \$6,050 for improvement of streets around court house block.

Gary, Ind.—County Commissioners are considering extension of 5th ave.

Indianapolis, Ind.—Board of Public

Works has confirmed resolutions for street improvements to cost \$50,000.

Marion, Ind.—Grant County Board of Commissioners will improve Curry gravel road in Fairmount Township.

Muncie, Ind.—Board of Works has instructed City Engineer Potter to prepare plans and specifications for construction of combined cement curb and gutter on both sides of Mulberry st.

Washington, Ind.—Council is considering paving with brick of two miles of streets.

Marshalltown, Ia.—Council has ordered four miles of additional paving; concrete will be material.

Lexington, Ky.—City will expend approximately \$6,000 on repaving South Lime-stone st. and \$4,000 on South Broadway.—John Skain, Mayor.

Natchitoches, La.—Council has adopted ordinances providing for six and two-tenths miles of concrete walk pavements on principal streets.

Preston, Md.—Preston residents are urging building of three miles of Shoemaker road from this town to Union Grove.

Lawrence, Mass.—Aldermen have passed ordinance appropriating \$150,000 for paving designated streets.

Lowell, Mass.—Boston and Maine Railroad will remove School and Walker st. grade crossings at cost of \$400,000.

Battle Creek, Mich.—Citizens have voted \$12,000 bonds for brick paving.

Calumet, Mich.—Calumet Township Board has instructed Engineer to prepare specifications for building of a new piece of road.

Negaunee, Mich.—Board of Public Works has estimated cost of improving Iron st. at \$31,000.

Pontiac, Mich.—Pontiac Township will build two miles of road from city limits out Baldwin st.

Meridian, Miss.—Lauderdale County is considering extension of road building; details not completed.

Elbow Lake, Minn.—Village council has authorized construction of cement sidewalks.

Princeton, Minn.—Fourteen towns have appropriated \$7,600 and State \$3,800 towards construction of roads.

Two Harbors, Minn.—County Commissioners will soon ask for bids for construction of road between this city and Knife River sometime during this month.

Two Harbors, Minn.—Council has voted to grade, macadamize and provide with concrete and combination curb and gutters Poplar and Cedar sts.

Virginia, Minn.—Bids will be received for 14 blocks of paving, one block to be of creosoted blocks, remainder either creosoted block, bitulithic, granitoid, tar macadam or Donnellite.

Kalispell, Mont.—Council has canceled all contracts for street work and has instructed City Engineer to prepare specifications for bituminous-asphalt and ask for bids for same.

Butler, Mo.—City will pave four streets with brick.

Hollister, Mo.—Road district is being organized between this city and Kerbyville for construction of wagon road.

Kansas City, Mo.—Council has passed ordinance to construct sidewalks on eight streets and grade seventeen streets.

Nevada, Mo.—Council has decided to improve portion of Cherry st.—J. D. Ingram, Mayor.

Norfolk, Neb.—Citizens will vote May 31 on \$55,000 bonds for paving Norfolk ave. with vit. brick, bituminous filled.—Edw. Harter, City Clerk.

Atlantic City, N. J.—Paving Meadow blvd. with Warrentine has been decided upon by Board of Freeholders, provided specifications and the general plan, as prepared by Engineer Rightmire receive approval of State Road Commissioner Gilkyson.

Elizabeth, N. J.—Council has set aside \$150 for surveyor to survey 17 miles of unimproved streets with view to making them improved thoroughfares.

Flemington, N. J.—Residents of Hunterdon County will petition Board of Freeholders to build macadam road from Morris County line to High Bridge.

Jersey City, N. J.—Street and Water

Board has approved specifications for improvement of Delaware ave. and Newkirk st.; also adopted resolution asking Board of Finance to appropriate \$4,069 for repaving Pavonia ave. with wooden blocks.

Morristown, N. J.—Board of Freeholders has decided to put all county roads in town in repair as soon as sewer laterals are completed.

Paterson, N. J.—Bids have been rejected for permanent paving of Park ave., Mill and River sts.

Red Bank, N. J.—Residents of Bank st. are urging improvement of that thoroughfare.

Trenton, N. J.—Board of Freeholders will receive bids latter part of month for resurfacing four county roads.

Trenton, N. J.—Council has adopted resolution appropriating \$5,000 for paving sidewalks where work is neglected by property owners.

Woodbridge, N. J.—Township Committee has decided to macadamize five streets.

Albany, N. Y.—Council has passed ordinance for paving of Learned st.; improvement of Hurlburt and W. Lawrence sts. is being considered.

Binghamton, N. Y.—Board of Contract and Supply has decided to pave both Main and Front sts. with brick.

Bronxville, N. Y.—Citizens will vote on macadamizing and sewerizing of Palmer ave.

Dunkirk, N. Y.—Council has rejected all bids for resurfacing W. Fourth st. with asphalt and paving sections of Levan and Fox sts.; bids will be readvertised.

Kenmore, N. Y.—West Hazeltine ave. will be improved at cost of \$1,000.

Lestershire, N. Y.—Village Board of Trustees has decided to macadamize Main st.

North Tonawanda, N. Y.—Council has directed Public Works Department to improve River road and Erie ave. with crushed stone. Thompson st. will be widened; River road will be macadamized from Island street to Gratwick, and Erie ave. will be improved in like manner a distance of over three miles.

White Plains, N. Y.—Board of Trustees will receive bids in June for macadamizing Lyon pl. and block of Waller ave.

Burlington, N. C.—Street and Sidewalk Commission will advertise for bids after June 6 for sidewalk improvements.—Jas. P. Montgomery, City Secretary.

Elizabeth City, N. C.—City is considering \$120,000 bond issue for street paving.

Youngsville, N. C.—Youngsville Township has voted tax for road improvements.

Fargo, N. D.—Citizens have voted in favor of paving.

Akron, O.—City has sold \$17,000 bonds to pave Arlington st. road with brick.

Batavia, O.—Amelia has sold \$3,000 street bonds to Milford National Bank at \$84 premium.

Bellevue, O.—Citizens have voted to repair Fairfield ave.

Canton, O.—Council has passed resolution for improvement of Smith ave. by paving with vit. paving blocks and constructing vit. block crosswalks.—A. R. Turnbull, Mayor.

Cleveland, O.—City Engineer Hoffman has estimated cost of opening W. 2d st. at \$200,000.

Columbus, O.—County Commissioners will purchase road roller.—Richard Sinclair, Commissioner.

Covington, O.—Council has decided to resurface Madison ave., Pike and Main sts., at cost of \$125,000.—John J. Craig, Mayor.

Columbus, O.—Franklin County will improve about 48 miles of highway during summer at cost of \$246,000.—H. K. Lindsey, County Surveyor.

Dayton, O.—Paving of Xenia pike through highlands is being urged.

Elyria, O.—Lorain County will spend from \$6,000 to \$8,000 for road repairs this summer.—H. L. Dunham, Masonic Temple, Engineer Road District No. 1.

Hamilton, O.—Citizens will vote June 25 on \$50,000 bonds to improve existing streets, city's portion.

Ironton, O.—Council is considering construction of sidewalks throughout city.

Lakewood, O.—Council has passed resolutions for paving, curbing and draining

Sloane ave. and Thoreau rd.—N. C. Cottabish, Mayor.

Oxford, O.—Township authorities will build number of roads.—Sam Sheard, Superintendent Road District No. 2.

Portsmouth, O.—Citizens have petitioned for widening and extension of Portsmouth and Galena Turnpike.

Tiffin, O.—City is considering 2,000 ft. of paving on Hudson and Jackson sts. and 4,000 ft. on Market st.—J. C. Peters, City Engineer.

Wellington, O.—Wellington Township Trustees are considering brick paving at a cost of \$10,000.—J. B. Murry, Township Clerk; Ohio Engineering Co., Masonic Temple, Elyria, Engineers.

Youngstown, O.—Council is considering paving three streets and sidewalks on King st.

Carnegie, Pa.—Bids will be received June 2, 7:30 p.m., for \$40,000 street improvement and \$13,000 general municipal bonds.—J. B. Hiles, Chairman Finance Committee.

Erie, Pa.—Council is considering resurfacing of 6th st. with sheet asphalt.

Forest Lake, Pa.—Forest Lake Association has appropriated \$3,000 to build road from Mast Hope depot to park.

Franklin, Pa.—Repaving of Center st. is being considered; petitions have been received for paving two streets.

Harrisburg, Pa.—City's share of cost of improving proposed streets has been estimated at \$61,000.—Selectman Snavely, Chairman Special Committee on Paving.

New Cumberland, Pa.—Borough Council has appropriated \$20,000 for macadamizing streets.

Olyphant, Pa.—Council has passed ordinance for paving Race st.

York, Pa.—Bids have been rejected for repaving North Duke st.

Central Falls, R. I.—Improvement of Liberty st. is being considered.

Chattanooga, Tenn.—Bids have been ordered advertised for paving Market st. with asphalt; Spruce st. with chert, asphalt or asphalt macadam; Chestnut st. with brick, asphalt or bitulithic and two streets with brick.

Abilene, Tex.—City is considering considerable street paving; material not yet selected.—E. N. Kirby, Mayor.

Atlanta, Tex.—Cass County Commissioners' Court has ordered election June 11 on \$40,000 road bonds for Precinct No. 7.

Bay City, Tex.—Matagorda County Commissioners have authorized election on \$100,000 bonds for construction of roads and bridges.

Beeville, Tex.—Bee County, Precinct No. 1, will vote on \$100,000 bonds in August for road improvements.

Canadian, Tex.—City will pave streets and lay four miles of cement sidewalks.

Dallas, Tex.—Residents on Wendelken st. have approved plans for paving.

El Paso, Tex.—Council has decided to pave E. Missouri st.

Fort Worth, Tex.—City Commission has ordered paving of Exchange ave.

Harlingen, Tex.—City is considering issuance of bonds for street improvements.

Houston, Tex.—County Commissioners have authorized Engineer to proceed with paving of E. Montgomery road.

Mercedes, Tex.—City will construct 60 blocks of concrete sidewalks, varying in width 4 to 14 ft.; also curb all streets.

San Marcos, Tex.—Citizens will vote June 4 on \$20,000 road improvement bonds.

Taylor, Tex.—City will pave Main st. with vit. brick; total cost to city \$30,000.

Provo, Utah.—Council has passed resolution creating sidewalk extension No. 4, District No. 11; cost \$11,590.

Lexington, Va.—County has rejected all bids for constructing eight miles of macadam road; Road Board will undertake the work under supervision of State Highway Commissioner.—A. T. Shields, County Clerk.

Norfolk, Va.—Estimates have been prepared by City Engineer for paving as follows: Hughes st., \$814; Charles st., \$2,570; Brambleton ave., \$4,480; Cooke ave., \$2,980; Tunstall ave., \$3,850; Gibbs ave., \$2,940; Maple ave., Brambleton to Highland, \$1,771; Maple ave., Highland to Tunstall, \$1,116.

Urbana, Va.—Citizens have voted \$3,000 bonds for additional sidewalks and other improvements.

Seattle, Wash.—Council has decided to plank two streets, grade Mead st. and lay concrete walk on Market st.

Walla Walla, Wash.—Street Committee has recommended that East Alder st. be paved.

Bangor, Wis.—Town will spend \$1,400 in road improvements this summer; Burns and other towns will expend similar amounts in conjunction with a comprehensive scheme of road improvement in the county, embracing a total expenditure of \$42,000.

Green Bay, Wis.—Town has petitioned Brown County Commissioners for aid in improving highways; \$10,000 is asked.

Monroe, Wis.—Street Committee is drawing up plans for four blocks of pavement; Committee has also been directed to procure plans for the improvement of the square, one for a 30-foot pavement, one for 60-foot pavement, and third for entire street.

Neenah, Wis.—Council has made preliminary arrangements for paving Market Square with concrete.

Racine, Wis.—City Engineer P. H. Connolly has estimated that city will expend about \$50,000 for public improvements; six streets will be paved.

CONTRACTS AWARDED

Oakland, Cal.—Improvement of crossings of six streets to Barber Asphalt Co.

Hartford, Conn.—Improvements on highways: Town of Colebrook, gravel road, 9,685 lin. ft., to John De Michael & Bros., Torrington, \$1.45 per lin. ft. for gravel, \$2.15 for telford, and 95c. for rubble drain; Town of Winchester, gravel road, 6,770 ft., to John De Michael & Bros., Torrington, \$1.54 for gravel, \$2.15 for telford, 90c. for rubble drain; bids for macadam rejected and other bids will be advertised for; Town of Ridgefield, macadam, 1,200 ft., to Merritt & Bush, \$2.85 for macadam and \$2.95 for telford; Town of New Milford, combination of gravel and macadam, 3,660 ft., to Frank Arrigoni & Bros., Durham, \$1.97 for gravel and macadam, \$2.41 for telford, and \$1 for rubble drain; Brookfield, combination gravel and macadam, 11,040 ft., to Frank Arrigoni & Bros., Durham, \$1.97 for gravel, \$2.41 for gravel and telford, \$1 for rubble drain.

Decatur, Ill.—Concrete culvert, McKinley ave., to J. P. McGarry.

Asheville, N. C.—Bitulithic paving, to Atlantic Bitulithic Paving Co., 20,000 sq. yds., \$2.12 per sq. yd.; to Southern Paving and Construction Co., of Chattanooga, brick on Roberts st., \$2.25 per sq. yd.

Alliance, O.—Street improvements, to John Wilson, city, grading S. Seneca ave., \$8,953; paving Haines ave., \$16,392; to John C. Devine, paving Webb, N. Park and S. Webb aves., at \$33,200.

Joliet, Ill.—Sidewalk, Richards st., to Newkirk & Powers Construction Co.

Centerville, Ia.—Brick paving, 3 miles, and curbing, 6 miles, to McGuire & Stanton, Leavenworth, Kan.; over \$100,000.

Davenport, Ia.—Paving with Sarco mineral rubber Tremont st. to McCarthy Improvement Co., \$1.79 per sq. yd., and cement curb, 35 cts. per lin. ft. and alley with brick to Hydraulic Concrete Constr. Co., \$1.72 per sq. yd.

Glenwood, Ia.—Paving square to E. E. Barber, about \$12,000.

Webster City, Ia.—Brick paving, to Zitterell & Sullivan, city, as follows: 2d st., \$2.02 per sq. yd.; 1st, Denison and Des Moines sts., \$1.96½ per sq. yd.

Fort Scott, Kan.—Paving Hill st., to Throgmorton & Gardiner.

Independence, Kan.—Constructing Shelton and Bulcher rock road to Spitcaufsky & Wagner, \$7,281.25.

Lexington, Ky.—Repairing various county roads; successful bidders: Cullen Crews, Slattan & Haney, J. L. McGarvey, Tom Carter, Ed. Barker, J. J. Dolan, Mrs. Mary Henry, Robert Crews, G. T. Horine, Pat Toomey, John Sharkey and Patrick Sharkey; contractors will furnish cracked rock and place it on road at \$8.50 per rod.

Louisville, Ky.—Paving, to Henry Bickel Co., vit. block Grand ave., \$1.90 per sq. yd.; to R. L. Figg Co., vit. brick, four streets, \$1.90 and \$1.92.

Southgate, Ky.—Street paving 1¼ miles, to E. J. Knoepfle, at \$11,920.

Baltimore, Md.—Paving, to P. Reddington & Sons, 321 St. Paul st., Hollins st., \$9,932; George Long Contracting Co., 218 S. Bouldin st., Philadelphia rd. and Fayette st., \$25,438.10; Canton st., \$4,272.50; all paving to be vit. brick.

Brookline, Mass.—Paving 8,800 sq. yds. with granite blocks on a compressed concrete foundation on Harvard and Beacon sts., bids opened May 9, to Simpson Bros. Corp., 166 Devonshire st., Boston, \$28,702.

Kalamazoo, Mich.—Improving 2 mi. of Territorial road to B. S. Carney; 1 1-5 mi. Ravine road to Lowe & Steers.

Kirksville, Mo.—Paving N. Mulanix st., to S. L. Eggert, \$2.04 per sq. yd.

St. Joseph, Mo.—Paving Fourth st., to Metropolitan Paving Co., \$1.50 per sq. yd.

St. Joseph, Mo.—Sidewalks, to Beierle & Vogel, 35c. per sq. ft. for curbing and 12½c. per sq. ft. for sidewalks.

Jersey City, N. J.—Improvement of 13th st., to Bernard Gannon; Fairmount ave., to J. F. Shanley & Co.; Coles st., to J. F. Shanley & Co.; Williams ave., to Henry Byrne.

Newton, N. J.—Paving roads, Sandystone Township, to M. Irving Demarest, Searen, 26,790 sq. yds., native stone, asphaltum binder, 59c.; 14,360 cu. yds. earth excavation, 40c., rock \$1.90; total, \$23,-

705.80; to Salmon Bros., Netcong, same amounts of material, 69c.; excavation, earth 38c., rock \$1.50; total, \$25,476.20.

Binghamton, N. Y.—Paving Main st., 14,590 sq. yds., to A. D. Osborn, \$1.96; Front st., 6,870 sq. yds., and Washington st., 2,560 sq. yds., to Tyne & Willey, \$1.95; prices include excavation of old concrete base and old asphalt top, 6-in. new concrete base, 1½ sand cushion and pitch expansion joints along the curb line.—J. A. Giles, City Engineer.

Port Jervis, N. Y.—Paving, to Muldry Bros., Albany, N. Y.; Clearfield clay brick selected; Resetting 800 ft. of curbing in concrete, 30c. per ft.; setting 3,000 ft. of new 4-in. by 20-in. curbing, 58c.; setting 340 ft. of protection curbing, 40c.; removing 3,500 cu. yds. of earth, 40c. per cu. yd.; paving 8,630 sq. yds. with Bessemer block, \$2.10; Bessemer paver, \$2.01; Clearfield fire clay, \$1.99; Jamestown, \$3.11; Mack clay block, \$2; Metropolitan shale, \$2.18; Shawmut shale, \$1.98; paving 2,080 sq. yds. within parallel lines 2 ft. outside trolley rails with Bessemer block, \$1.60, per sq. yd.; Bessemer paver, \$1.51; Clearfield, \$1.50; Jamestown, \$1.61; Mack, \$1.51; Metropolitan, \$1.68; Shawmut, \$1.49.

Rochester, N. Y.—Garfield st. walk, to Holden & Seitz, \$564.50; brick pavement, Portland to Miller st., to Witmore, Rauber & Vicinus, \$4,160; Barton st. grading, to William Baker, \$664; Barton st. grading and walks, to Henry Schoenfeldt, \$1,892.50; Costello Park improvement, to Nicola Desiderio, \$1,242; Lincoln avenue walks, Holder & Seitz, \$564.

Rochester, N. Y.—Street improvements: Tallinger alley asphalt pavement and sewer, \$2,863.50; Mt. Hope ave., asphalt and Medina block pavement, \$24,545; Oakland st., brick pavement, \$9,678.50; Federal st., brick pavement, \$18,567; all to Whitmore, Rauber & Vicinus; trenching and laying water pipe in group 238, to Ripton & Murphy, \$3,331.50.

Troy, N. Y.—Macadamizing a portion of South st. to Corliss Construction Co., 404 River st., \$6,100.

Warren, O.—Construction work, Road District No. 1, Heaton road, 8 miles, to Chennock Bros., city, \$1,314.80; Mecca st., Cortland, 5 miles, to Burke Oatley, Cortland, \$589.72; Center road, Champion, 1.5 miles to Durst & Shaffer, R. F. D., Warren, \$2,554.60; Highland ave., 1.5 miles, to A. H. Ready, city, \$2,032.50.—G. W. Perkins, Clerk.

Camp Hill, Pa.—500 tons of stone for macadamizing two streets, to D. Aught & Son, \$1.10 per ton.

York, Pa.—Highway improvements, to General Supply and Construction Co. and J. W. Hartley; furnishing crushed stone in district east of George st., to J. H. Schum, and black sand, to S. C. Meyers; crushed stone, to J. W. Hartley, 95c.; perch and spalls, 90c.

Memphis, Tenn.—Paving street, to H. P. Streicher & Co., of Toledo, O., \$1.22 per sq. yd.; total \$350,000.

Houston, Tex.—Paving, to E. G. Smith, city, four miles on Lynchburg and Crosby rd., \$22,200.—F. J. Mahaffey, County Engineer.

Bellingham, Wash.—Paving with brick and constructing concrete sidewalks on portion of Chestnut st., to Knute Sanset, \$28,704.

Everett, Wash.—Improvement of North Oaks and Rockefeller aves., to Everett Construction Co., \$5,791.

Everett, Wash.—Section C, Gold Bar-Index rd., to J. B. Harvey, \$6,240; extra charge of 50c. if loose rock, and 75c. if solid rock is encountered.

Seattle, Wash.—Paving Western ave., to Hans Pederson, Alaska Bldg., as follows: 2,400 sq. yds. brick block, \$2.60; 11,306 sq. yds. sandstone paving, \$3.50; 501 sandstone alley crossings, \$3.50; total cost, with other work and material required, \$125,490; T. Ryan, Sullivan Bldg., \$122,391.

Olympia, Wash.—Building State Road No. 15, Cowlitz County, near Woodlawn, to Warren Shorts, Seattle, \$7,415; State Aid Road No. 4, Lincoln County, to J. C. Charles, Keller, \$15,839; four other bidders; Road No. 7, King County, to Sloan Bros., Seattle, \$11,123; four other bidders; road from Kent to Kings County line, distance 7 miles, to W. F. Guernsey & Co., Seattle, \$87,033.

Wenatchee, Wash.—Paving Mission st. with asphalt-macadam, bids opened May 3, to Allen & McDerney, city, \$71,116.

Janesville, Wis.—Bush st. paving, 7,175 sq. yds., to Gund Graham Co., Freeport, Ill., \$1.77 per sq. yd.; 1,577 cu. ft. excavation, 39c.; other bidders John T. Blake, \$14,103.83, and T. E. Wooley, \$14,297.72; macadam on Washington st., to P. W. Ryan, 3,602 sq. yds., 51c.; other bidders, Thos. E. Wooley, \$3,518.87; J. T. Blake, \$2,406.20, and Gund Graham Co., \$2,569.82.—C. V. Kerch, City Engineer.

Milwaukee, Wis.—Paving Front st., to D. M. Sneddon Co., \$2.19 per sq. yd.

Superior, Wis.—Macadamizing, to J. B. Palmer, \$6,213.

Ottawa, Ont., Can.—Asphalt pavement on Wellington st., to Barber Asphalt Paving Co., \$22,190. Other bidders: Union Construction Co., Ottawa, \$23,197; Ottawa Construction Co., Ottawa, \$24,000; City Engineer, \$24,804.

Sault Ste. Marie, Ont., Can.—Cement walks, to Maple Leaf Artificial Paving Co., Simcoe, Ont., for the whole, \$21,445; for section A, \$10,500; for section B, \$14,500.

Yorktown, Sask., Can.—Constructing 80,000 sq. ft. concrete sidewalks, bids opened April 25, to Comery & Mattaini, Guelph, Ont., 18c. per sq. ft.

BIDS RECEIVED

Denver, Col.—Grading and curbing in Montclair Improvement District No. 1, which consists of the chain of boulevards which is to connect Cheesman and city parks; Anderson Ord and Savage, \$154,209; Henry S. Moore, \$155,539; Independent Construction Co., \$168,985; Thos. J. Tully, \$169,657; Denver & Pueblo Construction Co., \$169,657, and J. Fred Roberts, \$170,648.

Detroit, Mich.—Paving, Calvert ave., asphalt, Julius Porath, \$7,457; Ferry ave., asphalt, John A. Mercier, \$11,502; Hillger ave., cedar, Thos. E. Currie, \$10,995.

Elizabeth, N. J.—Nearly nine miles of country roads as follows: Lake ave. and Raritan rd., McGovern Construction Co., Trenton, asphalt oil, \$41,105; C. H. Winans Co., Linden, asphalt oil, \$39,236.08; Amiesite, \$52,142.08; Warrenite, \$51,664.08; fibertine, \$54,532.08; Headley good road construction, \$42,104.08; tropia, \$41,387.08; Weldon Construction Co., asphalt oil, \$41,073.30; Warrenite, \$44,658.30; Headley good road construction, \$34,620.30; Standard Bitulithic Co., of New York, Warrenite, \$46,635.60. Palisade ave. and Madison Hill rd., McGovern Construction Co., asphalt oil, \$38,493; Amiesite, \$51,764.30; Warrenite, \$50,849.10; fibertine, \$53,365.90; Headley good road construction, \$41,239.50; Weldon Construction Co., asphalt oil, \$30,982.50; Amiesite, \$39,219.31; Warrenite, \$42,651.30; Headley good road construction, \$33,041.70; Standard Bitulithic Co., Warrenite, \$44,463.80. Shunpike rd., McGovern Construction Co., asphalt oil, \$43,555; Clarence H. Winans Co., asphalt oil, \$41,421.49; Weldon Construction Co., asphalt oil, \$31,944.35; Amiesite, \$37,332.60; Warrenite, \$40,390.89; Headley good road construction, \$32,963.76; Standard Bitulithic Co., Warrenite, \$47,192.52. Turkey rd. and Springfield ave., McGovern Construction Co., asphalt oil, \$29,372; C. H. Winans Co., asphalt oil, \$32,387.94; Amiesite, \$43,179.14; Warrenite, \$41,252.14; fibertine, \$44,142.14; Headley good road construction, \$35,228.44; tropia, \$35,856.84; Weldon Construction Co., asphalt oil, \$25,382.85; Amiesite, \$31,741.95; Warrenite, \$34,439.75; Headley good road construction, \$27,309.85; J. C. Rapman, New York City, asphalt oil, \$32,296; Amiesite, \$35,093; Warrenite, \$46,748.50; fibertine, \$53,493; Headley good road construction, \$37,113; Standard Bitulithic Co., Warrenite, \$34,033.60.

Utica, N. Y.—Paving 12 different streets: Cedar st., Warner-Quinlan Co., with natural stone curb and walk, \$2,242.70; artificial stone curb and walk, \$2,089.50; John R. Lee, natural stone curb and walk, \$2 166.50; artificial, \$1,906.50; Barber Co., natural stone curb and walk, \$2,093.95; artificial, \$1,946.45. Conklin ave., Warner-Quinlan, with natural stone curb, \$7,137.80; artificial, \$6,710.30; John R. Lee, natural stone curb, \$6,985.65; artificial, \$6,255.65; Barber Co., natural stone curb, \$6,731.45; artificial, \$6,063.95. George pl., Warner-Quinlan, with natural stone curb, \$5,458; artificial, \$5,130.70; John R. Lee, natural stone curb, \$5,327.55; artificial, \$4,771.55; Barber Co., natural stone curb, \$5,132.15; artificial, \$4,624.05. James st., Warner-Quinlan, with natural stone curb, \$5,126.20; artificial, \$4,799.20; John R. Lee, natural stone curb, \$4,930.15; artificial, \$4,442.15; Barber Co., natural stone curb, \$4,744.60; artificial, \$4,305.60. Leeds st., Warner-Quinlan, with natural stone curb, \$10,977.30; artificial, \$10,338.60; John R. Lee, natural stone curb, \$10,849.95; artificial, \$9,683.95; Barber Co., natural stone curb, \$10,419.25; artificial, \$9,345.35. Springate st., Warner-Quinlan, with natural stone curb, \$5,212.40; artificial, \$4,895; John R. Lee, natural stone curb, \$5,121.55; artificial, \$4,567.55; Barber Co., natural stone curb, \$4,916.60; artificial, \$4,408.80. Jay st., Warner-Quinlan, with natural stone curb, \$8,849.10; artificial, \$8,309.40; John R. Lee, natural stone curb, \$8,669.95; artificial, \$7,759.95; Barber Co., natural stone curb, \$8,351.05; artificial, \$7,520.15. Canal st., Warner-Quinlan, with natural stone curb, \$3,624.50; artificial, \$3,463.10; John R. Lee, natural stone curb, \$3,462.35; artificial, \$3,222.35; Barber Co., natural stone curb, \$3,381.10; artificial, \$3,243.60. Winner ave., Warner-Quinlan, with natural stone curb, \$4,414.30; artificial, \$4,140.20; John R. Lee, natural stone curb,

\$4,306.16; artificial, \$3,838.15; Barber Co., natural stone curb, \$4,076.45; artificial, \$3,649.75. Warren st., Warner-Quinlan, asphalt, with natural stone curb and walk, \$5,873.50; artificial curb, \$5,495.80; asphalt and sandstone strip natural curb, \$6,332.70; artificial, \$5,955; Barber Co., asphalt, natural stone curb, \$5,565.95; artificial, \$4,963.05; asphalt and sandstone, natural curb, \$5,946.75; artificial, \$5,349.85; John R. Lee, asphalt, natural stone curb, \$5,772.75; artificial, \$5,120.75; asphalt and sandstone, natural curb, \$6,094.75; artificial, \$5,442.75. Green st., Warner-Quinlan, asphalt with natural stone curb, \$6,736.92; artificial, \$6,283.92; asphalt and sandstone, natural curb, \$7,294.52; artificial, \$6,841.52; Barber Co., asphalt, natural stone curb, \$6,296.33; artificial, \$5,635.33; asphalt and sandstone, natural stone curb, \$6,758.73; artificial, \$6,097.73; John R. Lee, asphalt, natural stone curb, \$6,547.36; artificial, \$5,819.36; asphalt and sandstone, natural curb, \$6,938.36; artificial, \$6,210.36. Kent st., Warren-Quinlan, with natural stone curb, \$2,560.70; artificial, \$2,398.55; Barber Co., natural stone curb, \$2,430.17; artificial, \$2,151.63; John R. Lee, natural stone curb, \$2,504.10; artificial, \$2,212.10; J. W. Johnston, Shawmut or Pittsburgh-Buffalo, brick, natural stone curb, \$2,876.25; artificial, \$2,730.25; Corning or Mack brick, natural stone curb, \$2,896.25; artificial, \$2,820.25.

Springfield, O.—Paving: Yellow Springs st. from Main to State st., Edward Ryan, brick, Bolan \$1.82, Townsend \$1.90, Trinidad asphalt \$2.09, Bermuda asphalt \$2.09; Toledo Asphalt Block Co., Trinidad asphalt block \$2.17, vit. brick, selected, \$1.50; Huonker & Williams, brick, Bessemer \$1.80, Wassall \$1.70, asphalt block \$2.20; J. A. Shoup & Co., Dayton, brick, Harris \$1.63, Athens \$1.68, Nelsonville \$1.68, Wassall \$1.64, Portsmouth \$1.71, Metropolitan \$1.62; Massie Bros. & Long, (a) \$6,900, (d) \$13,400; J. H. McHugh, brick, Nelsonville or Athens \$1.60, People's \$1.63, Carlisle \$1.63, Townsend \$1.60, Bolan or Minerva \$1.62, Metropolitan \$1.63, Wassall \$1.57, California asphalt, \$2,05, asphalt block, \$2.21; Peters Bros. Co., Chicago, brick, Bolan \$1.85, Obispah asphalt \$2.05; Cleveland Trinidad Paving Co., brick, Bolan, Metropolitan, Wassall or Minerva \$1.80, Trinidad Lake asphalt \$2.15, Bermuda asphalt \$2.22; Barbour Asphalt Paving Co., Cincinnati, brick, Bolan, Bessemer \$1.90, Trinidad asphalt, \$2.18; M. J. Hannon, brick, Bolan \$1.62, Townsend \$1.62, 20th Century \$1.70, Bessemer \$1.78, Portsmouth \$1.66, Wassall \$1.65, Metropolitan \$1.72, Minerva \$1.68. McCreight ave., from Limestone st. to Home pl.; Edward Ryan, brick, Bolan \$1.80, Townsend \$1.90, Trinidad asphalt \$2.09, Bermuda asphalt \$2.09; Toledo Asphalt Block Co., asphalt block \$2.25, brick, selected, \$1.65; M. J. Hannon, brick, Bolan \$1.65, Townsend \$1.74, 20th Century \$1.72, Bessemer \$1.80, Portsmouth \$1.68, Wassall \$1.67, Metropolitan \$1.74, Minerva \$1.70; Cleveland Trinidad Paving Co., brick, Bolan, Metropolitan, Wassall or Minerva \$1.80, Trinidad asphalt \$2.15, Bermuda asphalt \$2.22; Peters Bros. Paving Co., brick, Bolan \$1.85, Obispah asphalt \$2.05; J. H. McHugh, brick, Athens \$1.63, Nelsonville \$1.63, Townsend \$1.63, Bolan or Minerva \$1.65, Harris \$1.63, Wassall \$1.59, Bessemer \$1.63, Metropolitan \$1.67, Trinidad asphalt \$2.10, asphalt block \$2.15; Barbour Asphalt Paving Co., brick, Bolan or Bessemer \$1.99, Trinidad asphalt \$2.22; Pleasant st., Yellow Springs to Pennsylvania Railroad: Toledo Asphalt Block Co., Trinidad asphalt block \$2.17, vit. brick, selected, \$1.50; Edward Ryan, brick, Bolan \$1.80, Townsend \$1.90, Trinidad asphalt \$2.09, Bermuda \$2.09; Cleveland Trinidad Paving Co., brick, Bolan, Metropolitan, Wassall or Minerva \$1.80, Trinidad asphalt \$2.15, Bermuda asphalt \$2.22; Peters Bros. Paving Co., brick, selected, \$1.85, Obispah asphalt \$2.05; J. H. McHugh, brick, Nelsonville, Athens \$1.63, Bolan or Minerva \$1.67, Portsmouth \$1.62, Carlisle \$1.65, Bessemer \$1.63, Metropolitan \$1.67, Wassall \$1.59, asphalt block \$2.15; M. J. Hannon, brick, Bolan \$1.62, Townsend \$1.62, 20th Century \$1.70, Bessemer \$1.78, Portsmouth \$1.66, Wassall \$1.65, Metropolitan \$1.62, Minerva \$1.68; J. H. McHugh, brick, Nelsonville or Athens \$1.63, Townsend \$1.63, Bolan or Portsmouth \$1.65, Carlisle \$1.65, People's \$1.65, Harris \$1.65, Minerva \$1.63, Bessemer \$1.73, Metropolitan \$1.67, Wassall \$1.59, asphalt block \$2.15; Barbour Paving Co., brick, Bolan or Bessemer \$1.90, Trinidad asphalt \$2.18; Pleasant st., Limestone st. to Center st.: M. J. Hannon, brick, Bolan \$1.62, Townsend \$1 and \$2, 20th Century \$1.70, Bessemer \$1.78, Portsmouth \$1.66, Wassall \$1.65, Metropolitan \$1.62, Minerva \$1.68; J. H. McHugh, brick, Nelsonville or Athens \$1.63, Townsend \$1.63, Bolan or Portsmouth \$1.65, Carlisle \$1.65, People's \$1.65, Harris \$1.65, Minerva \$1.63, Bessemer \$1.73, Metropolitan \$1.67, Wassall \$1.59, asphalt block \$2.15; Barbour Paving Co., brick, Bolan or Bessemer \$1.90, Trinidad asphalt \$2.18; Edward Ryan, brick, Bolan \$1.80, Townsend \$1.90, Trinidad asphalt \$2.09, Bermuda asphalt \$2.09; Peters Paving Co., Bolan \$1.85, Obispah asphalt \$2.09; Cleveland Trinidad Paving Co.: brick, Bolan, Metropolitan, Wassall or Minerva \$1.80,

Trinidad asphalt \$2.15, Bermuda asphalt \$2.22; Toledo Asphalt Block Co., asphalt block \$2.17, brick, selected, \$1.50. City cement contract work: District No. 1, Hugh Russell, sidewalks, 9c.; district No. 2, Hugh Russell, 9c.; Owen McManus, districts 1 and 2, 9c.; Thomas E. Wren & Co., No. 1, 8½c.; No. 2, 8¼c.; curbing and guttering and crosswalks are also included with a slight variation in bids.

York, Pa.—Paving Duke st.: Filbert Paving Co., brick, \$1.63 per sq. yd.; Filbertine, \$1.11 per sq. yd. General Supply & Construction Co., Mack brick, \$1.57; Standard Bitulithic Co., bitulithic, \$1.96; Junilata Paving Co., bitulithic, \$1.90.

Abilene, Tex.—Paving, Ackander Bros., brick, \$45,472; Texas Bitulithic Co., bitulithic, \$45,297; R. S. Biome Co., granitoid, \$44,892; Ackander Bros., Hassam compressed concrete, \$36,765.

Dallas, Tex.—Grading Bexar or Camp st., South Dallas: E. L. Haralson, 32c. per cu. yd.; Innes Gano, 25c.; D. A. Prince, 35c.; Coats Grading Co., 27c.

Provo, Utah.—Paving district No. 12, extension No. 1: Moran Construction Co., Ogden, \$15,225.80; S. H. Belmont, city, \$16,433.90; Johnson Bros., city, \$13,275.28; Gilkerson & Long, Salt Lake, \$14,910.90; Wheelwright Construction Co., Ogden, \$12,800; J. P. Dunn, Salt Lake, \$14,672.49; McKay & Reed, Salt Lake, \$14,059.68.

Spokane, Wash.—Asphalt and brick paving streets in Cannon Hill Park: Independent Asphalt Paving Co., \$57,389; Eastern Asphalt Paving Co., \$57,000; Barber Asphalt Paving Co., city, \$52,395; for grade and sidewalks on (a) Haven st., (b) 9th ave., (c) Nevada st., (d) also sewer and sidewalks in Third Ward District 3: Abbott & Joslin (a) \$7,380, (b) \$6,900, (d) \$13,400; Massie Bros. & Long, (a) \$6,637, (c) \$7,776; John Fife, (a) \$7,344, (b) \$7,444, (c) \$8,644, (d) \$13,444; C. M. Payne (a) \$6,760, (c) \$8,300; W. O. Shawgo, (a) \$7,251, (c) \$8,490; Naylor & Norlin, (a) \$7,523, (b) \$6,984, (c) \$7,989; L. B. Handley, (a) \$7,200; Wetzel & Foster (a) \$7,500, (b) \$7,775, (c) \$8,495; Mitchell Bros., (a) \$6,848, (b) \$6,972, (c) \$7,598, (d) \$12,298; Root & Biegler, (c) \$8,-

Spokane, Wash.—Paving with asphalt and brick, also sidewalk paving, Lincoln st., Independent Asphalt Paving Co., \$65,700; Barber Asphalt Paving Co., \$64,000; engineer's estimate, \$55,000; grade, walk and bridge, 2d ave., John Fife, \$30,344; engineer's estimate, \$26,000.

Fond du Lac, Wis.—Reinforced concrete pavement on Olcott and Merrill sts. (a) J. Rasmussen & Sons Co., combined concrete curb and gutter, 45c.; (b) National Construction Co., 50c.; (c) G. H. Stanchfield, 45c., bids same on both streets; reinforced concrete pavement on 5-in. concrete foundation, Olcott st., (a) \$1.33, (b) \$1.20, (c) \$1.25; Merrill st., (a) \$1.28½, (b) \$1.20, (c) \$1.24; 4-in. concrete retaining curb, (a) 25c., (b) 30c., (c) 27c., same bids on both streets; resetting catch basins, new tops, (a) \$12, (b) \$11, (c) \$9; same both streets; new basins, Merrill st., (a) \$25; (b) \$30, (c) \$28; resetting old basins, Merrill st., (a) \$5, (b) \$5, (c) \$4; total bids, Olcott st., (a) \$3,202.30, (b) \$3,022.10, (c) \$3,029.76; Merrill st., (a) \$13,926.84, (b) \$13,517, (c) \$13,488.22.

SEWERAGE

Birmingham, Ala.—City Engineer Murray Nicholson has completed plans and specifications for installation of a storm drainage system on the north side to drain all of Norwood, North Highlands, Fountain Heights and Smithfield; cost about \$300,000.

Little Rock, Ark.—Construction of sewer system in Eighth Ward, cost about \$25,000, is being considered.—E. A. Kingsley, Superintendent of Public Works.

Lincoln, Cal.—Trustees have decided to extend sewer system into new additions to city.

Santa Clara, Cal.—Council is considering ordinance providing for sewerage of entire town.

Sawtelle, Cal.—Construction of sewer system is being considered.—Walter Downs, City Recorder.

New Britain, Conn.—Mayor Jos. M. Halloran has suggested matter of proper and sufficient treatment of daily sewage flow be taken up.

Pensacola, Fla.—Citizens will vote on June 14 on \$100,000 sewerage bonds.

St. Augustine, Fla.—Sewerage Committee has recommended election on installation of gravity system of sewerage.—Eugene Masters, Chairman.

Dalton, Ga.—Citizens have voted \$20,000 bonds for extension of sewer system.

Macon, Ga.—Construction of about 7½ miles of pipe sewers in Vineville is being considered.—C. C. Anderson, City Engineer.

Lewistown, Ill.—Citizens will soon vote on \$27,000 bonds for constructing sewer.

St. Charles, Ill.—Plans have been completed for sanitary sewer system; cost about \$90,000.—F. B. Hunt, Mayor.

Richmond, Ind.—Estimate will be prepared of cost of constructing concrete retaining wall at sewage disposal plant.

Hopkinsville, Ky.—City is considering construction of concrete and tile sewers in three streets.—B. F. McClaire, City Engineer.

Kalamazoo, Mich.—Cost of proposed sewer improvements, including sewage pumping station, has been estimated at about \$15,000.

Mt. Clemens, Mich.—Council has ordered construction of 12-in. crock later sewer on South Front st.

Rochester, Minn.—Plans will be prepared by City Engineer for construction of sewer.

Thief River Falls, Minn.—Council has decided to establish additional sewer systems.

Bozeman, Mont.—Cost of extending Sewer No. 1 has been estimated at \$5,000.

Crete, Neb.—Plans and specifications for sewer system covering practically the whole city have been approved by Council.—P. A. Edquist, Omaha, Special Engineer for Construction.

Haddon Heights, N. J.—Citizens will soon vote on establishment of sewerage and sewage disposal.

New Brunswick, N. J.—City will install sprinkling filter for sewage at landing bridge outlet and unite four outlets into two; sewage from latter will be treated with chlorine and thence passed through sedimentation tanks into retention tanks; Borough of Highland Park is also planning to install similar system.

Perth Amboy, N. J.—City has sold \$41,000 sewer bonds to R. M. Grant Co., New York.

Brooklyn, N. Y.—Borough President Steers has ordered sewers constructed on six streets.

Geneva, N. Y.—Board of Public Works has decided to lay extension of sewer system through three streets.

Mount Vernon, N. Y.—Governor Hughes has signed bill increasing to \$175,000 sum Council may expend for construction of sewage disposal works.

Pleasantville, N. Y.—Plans for sewerage system, sedimentation tanks, sprinkling filters, sand filters and chlorinating plant, prepared by Lederle & Provost, 33 W. 38th st., New York City, for property of Hebrew Sheltering Guardian Society, have been approved by the State Board of Health; constructions for these works, together with improvements for water supply involving aggregate cost of about \$60,000, will be contracted for within next few weeks.

Carrington, N. D.—Consulting Engineer L. P. Wolff, 204 Essex Bldg., St. Paul, Minn., is preparing plans for complete sewerage system.

Hamilton, O.—Citizens will vote June 25 on \$50,000 bonds for storm sewer construction.

Huntington, O.—Citizens have voted \$275,000 bonds for sewer and street improvements.

Richwood, O.—Council is considering construction of sewer on London ave.

Struthers, O.—Council has decided to construct sewers in Short and Elm sts.

Allentown, Pa.—Council has adopted ordinance increasing city's bonded indebtedness by \$34,500 for construction of sewer.

New Wilmington, Pa.—State Health Department has approved plans of Geo. B. Zahnert, New Castle, for sewage disposal plant.

Reading, Pa.—Council failed to pass proposed \$200,000 loan bill for additional sewers.

Sharon, Pa.—Kimberly & Miller, Pittsburgh, will draw plans for proposed disposal plant.

South Fork, Pa.—Engineer O. P. Thomas, Suppes Bldg., Johnstown, Pa., has prepared plans for sewerage system; work includes laying of 3½ miles of pipe.—W. H. Moore, Borough Clerk.

Warren, Pa.—City will construct 2,000 ft. of sewer.—A. Wheelock, City Engineer.

West Chester, Pa.—Citizens have defeated proposition to borrow \$200,000 for proposed sewerage system.

York, Pa.—Bids will be advertised for laying additional sanitary sewers.

Farmville, Va.—City is considering municipal ownership of sewer and water works system.

Vancouver, Wash.—Plans have been prepared for construction of B st. lateral sewer at cost of \$7,000; work includes 600 ft. 10-in. and 2,000 ft. 8-in. vit. pipe, and 11 manholes.—H. H. Lotter, City Engineer.

Marinette, Wis.—Council will expend \$3,000 for the extension of main brick sewer.

Monroe, Wis.—Council is considering construction of sewer on Fulton st.

Racine, Wis.—City Engineer P. H. Connolly has estimated that city will expend about \$50,000 in public improvements; sewer system will be extended and improved.

Buffalo, Wyo.—City is considering construction of sewerage system at estimated cost of \$50,000.—Oliver G. Norval, Mayor.

Strathcona, Alta., Can.—Construction of sewer system is being considered.—Alex Potter, New York, N. Y., Consulting Engineer.

Toronto, Ont., Can.—Provincial Board has approved plans for sewage outfall works; cost about \$20,000.

Wingham, Ont., Can.—Provincial Board has approved sewage purification plans of this city.

CONTRACTS AWARDED

New Decatur, Ala.—Sanitary sewer laterals, to McPoland & O'Gara.—Henry Hartung, City Clerk.

Atlanta, Ga.—Relief sewer, Loyd st., to C. W. Lane Construction Co., \$80,116; sections 2, 3 and 4, to B. F. Meeks Construction and Equipment Co., \$80,171.

Clinton, Ia.—Sewer, LeCaire st., to Patrick Connelly.

Missouri Valley, Ia.—Constructing system of sewers from plans of the Iowa Engineering Co., Clinton, to Omaha Construction Co., Omaha, Nebr., as follows: 84 ft. 18-in. c.-i. pipe, \$4,200 ft.; 12-in., \$2,25; 4,704 ft. 18-in., \$1,03; 390 ft. 15-in., 47c.; 2,770 ft. 12-in., 57c.; 7,774 ft. 10-in., 54c., and 17,534 ft. 8-in., 46c.; 64 manholes, each \$35; a bulkhead, \$100, and 1,000 ft. ¾-in. galvanized pipe, 25c.; total, \$24,184. Totals of other bids: J. J. Dunnegan, Shenandoah, \$26,483; J. W. Turner Improvement Co., Des Moines, \$26,649; McKay & Cathro, Omaha, Neb., \$26,783; O'Farrell Contracting Co., Dubuque, \$27,285; R. C. De La Hunt, Cedar Rapids, \$27,338; the Lytie Construction Co., Sioux City, \$28,252; Lang Construction Co., Harlan, \$28,355; Independent Construction Co., Davenport, \$28,372; B. J. Sweat, Boone, \$28,792; Fraser & Danforth, Rochester, Minn., \$30,042; Elkhorn Construction Co., Fremont, Neb., \$31,439; Engineer's estimate, \$26,000.

Hyde Park, Mass.—Sewer construction; footings are from unit prices on estimated quantities. Rugby district, 4,233 ft. of pipe to A. W. Brine, Boston, \$9,320; bidders: P. H. Rooney, Hyde Park, \$10,255.95; A. D. Addario & Co., Boston, \$10,647.85; Bryne Contracting Co., Boston, \$12,362.80; J. Palmer, Boston, \$12,440.20; J. J. Falvey, Boston, \$12,821; Commonwealth Construction Co., Boston, \$12,837.51; A. Cafelo, Boston, \$12,960.80; C. E. Trumball, Boston, \$13,035.35; T. H. Corigan, Hyde Park, \$13,722.25; C. Gowan, Boston, \$14,525.95; A. Cusack, Boston, \$15,633.40; Mattakeeset st., 930 ft. of 8-in. pipe, to A. W. Brine, Boston, \$1,263.15; bidder: C. E. Trumball, Boston, \$1,603; A. Cafelo, Boston, \$1,628.25; Bryne Contracting Co., Boston, \$1,629.50; J. E. Palmer, Boston, \$1,655.30; P. H. Rooney, Hyde Park, \$1,886.50; C. Gow, Boston, \$1,931.25; E. F. Kennedy, Boston, \$2,208.40; T. H. Corrigan, Hyde Park, \$2,517; A. D. Addario & Co., Boston, \$2,566.50; Safford st. and Greenwood ave., 1,242 ft. of 8-in. pipe, to T. H. Corrigan, Hyde Park, \$1,329.34; P. H. Rooney, Hyde Park, \$1,412.55; Bryne Contracting Co., Boston, \$1,687.80; A. D. Addario & Co., Boston, \$1,745.70; Commonwealth Construction Co., Boston, \$1,955.67; A. Cafelo, Boston, \$2,167.15; E. F. Kennedy, Boston, \$2,269.79; C. Gow, Boston, \$1,886.30; Walnut st., 475 ft. of 8-in. pipe, to P. H. Rooney, Hyde Park, \$612.15; bidders: Bryne Contracting Co., Boston, \$723.05; C. Gow, Boston, \$765.25; E. F. Kennedy, Boston, \$1,051.50; T. H. Corrigan, Hyde Park, \$609.40; Milton ave., Warren ave., 491 ft. of 6-in. pipe, to T. H. Corrigan, Hyde Park, \$436.75; P. H. Rooney, Hyde Park, \$538.60; Bryne Contracting Co., Boston, \$702; E. F. Kennedy, Boston, \$906.67; B st., 310 ft. of 8-in. sewer pipe, to E. F. Kennedy, Boston, \$464.20; Bryne Contracting Co., Boston, \$535.50; C. Gow, Boston, \$555; P. H. Rooney, Hyde Park, \$735; T. H. Corrigan, Hyde Park, \$758.50; C. G. Noris, Town Engineer.

Paterson, N. J.—Building sewers, four streets, to Jos. Puglia.

Albany, N. Y.—Sewers in four streets, to J. S. Campion, \$1,257.90.

Hood River, Ore.—Construction of sewers, only bidder, R. D. Gould & Co., city, as follows: 1,950 ft. 8-in. vit. sewer, some rock at one end, 53c.; loose rock excavation, \$2.50 per cu. yd.; earth excavation, 65c.; Y-pipes in place, \$2 each; award made as petitioned by residents; work under way.—W. B. Langille, City Recorder.

Bridgeton, N. J.—Sewage disposal plant, to Hudson Terminal Construction Co., of New York, \$42,000.

Paterson, N. J.—Building sewers, four streets, to Jos. Puglia.

Bridgeton, N. J.—Sewers, 3.2 miles, 8 to 24 ins., and sewage disposal tanks: Hudson Terminal Construction Co., New York City, \$40,670.10; B. F. Sweeten & Son, Camden, \$48,664.14; United Paving Co., Atlantic City, \$52,632.20; Wormser-Goodman Co., New York City, \$54,531.60; J. W. Heller, Newark, \$58,936.40.

Springfield, O.—Sewer in Fair, Clark Plum, and Lowry ave.: Bernard Higgins, 6-in. pipe, 40c.; 8-in. pipe, 60c.; Charles Bird, 6-in., 10c.; 8-in., 85c.; Daniel Doyle, 6-in., 34c.; 8-in., 49c.; Huonker & Williams, 6-in., 30c.; 8-in., 49c.; M. J. Cooney, 6-in., 35c.; 8-in., 68c.; Jefferson st., from Race to Western ave.: M. J. Cooney, 6-in., 28c.; 8-in., 50c.; Daniel Doyle, 6-in., 34c.; 8-in., 50c.; Charles Bird, 6-in., 10c.; 8-in., 85c.; Huonker & Williams, 6-in., 30c.; 8-in., 50c.; Mulberry st., from Western ave. to Yellow Springs st.: Bernard Higgins, 6-in. pipe, 40c.; 8-in., 50c.; Daniel Doyle, 6-in., 33c.; 8-in., 49c.; Charles Bird, 6-in., 10c.; 8-in., 75c.; Grand ave and Lowry ave.: Daniel Doyle, 6-in. pipe, 34c.; 8-in., 50c.; Charles Bird, 6-in., 10c.; 8-in., 75c.; Bernard Higgins, 6-in. pipe, 40c.; 8-in., 60c.; Huonker & Williams, 6-in., 30c.; 8-in., 49c.; M. J. Cooney, 6-in., 28c.; 8-in., 59c.; High and Bell aves.: Huonker & Williams, 6-in. pipe, 40c.; 8-in. pipe, 65c.; Daniel Doyle, 6-in., 40c.; 8-in., 70c.; M. J. Cooney, 6-in., 38c.; 8-in., 70c.; Charles Bird, 6-in., 50c.; 8-in., \$1.

Binghamton, N. Y.—Sewers, (a) Second and (b) James sts.: C. W. Rose, (a) \$3,265.16, (b) \$797.70; Tyne & Willey, (a) \$3,312.91, (b) \$739.10; Geo. Serifina, (b) \$712.40; T. B. Bidwell, (a) \$3,190.86, (b) \$685.60; Engineer's estimate, (a) \$3,250, (b) \$800.

Madill, Okla.—Sewer system from plans of the Southwestern Eng. Co., Oklahoma City, Tonkawa Constr. Co., lowest bidder, as follows: 2,225 ft. 15-in. pipe, 73c.; 400 ft. 12-in., 67c.; 7,475 ft. 10-in., 51c.; 8,685 ft. 8-in., 42c.; 350 ft. 6-in., 41½c.; 45 manholes, each \$25 and \$35; 4 lampholes, each, \$5; 6 flush tanks, each, \$65; 1 purification plant, \$4,288; total, \$16,051. Totals of other bids: Stokes Constr. Co., \$18,266; P. J. Meredith & Co., \$18,579, and J. E. McMillan Co., \$17,661.

Dallas, Tex.—Storm Sewer on Carlisle st., vitrified pipe, 12 to 24-in. in size: J. B. Winsett, Jr. Co., 24-in., 475 ft., \$860; 18-in., 44 ft., \$64.10; 16-in., 68 ft., \$50.95; 12-in., 100 ft., \$64.37. Dallas Home Improvement Co., per ft., \$1.80 to 60c., according to size. George S. Vivian, \$1.75 to 65c. per ft. Forrest H. Lancashire, \$1.99 to 60c. per ft.

Spokane, Wash.—Sewer, First Ward sub-trunk line district 16, G. Burgie, \$3,700; J. C. Broad, \$3,965; J. Fife, \$2,844; T. Malony, \$3,232; engineer's estimate, \$3,291; Fourteenth ave., J. C. Broad, \$1,865; J. Fife, \$2,244; W. J. Cross, \$1,661; T. Malony, \$1,752; engineer's estimate, \$1,881.

WATER SUPPLY

Decatur, Ala.—Decatur Water Works Co. is making arrangements to have half-million gallon capacity filtering system added to plant in New Decatur.

Phoenix, Ala.—City will purchase pump and dynamo; capacity 25,000.—T. W. Britton, Mayor.

Conway, Ark.—Dickinson & Watkins, Southern Trust Bldg., Little Rock, have been selected as Engineers for proposed water works to be constructed; cost about \$75,000.—G. W. A. Wilson, Secretary Water Board.

Imperial, Cal.—City Trustees have decided to construct pipe line from Brawley main canal to the city reservoir for new municipal water supply; cost \$10,000.

Lincoln, Cal.—Trustees have decided to extend water system into new additions to city.

Denver, Col.—Board of Supervisors has passed ordinance providing for election on the new water franchise.

Waterbury, Conn.—Hill st. residents are urging installation of pumping plant; cost \$125,000.—R. A. Cairns, City Engineer.

Pensacola, Fla.—Citizens will vote June 14 on \$50,000 bonds for city market.

Donaldsonville, Ga.—Citizens have voted bonds in the sum of \$20,000 for improving water works and installing electric light plant.

Jonesboro, Ga.—Citizens will soon vote on water works bond issue.

Elmhurst, Ill.—City is considering installation of well system.

McLansboro, Ill.—Installation of municipal water supply is being considered.—J. R. Ross, Mayor.

Laporte, Ind.—Report will be prepared by Engineers Alvord & Burdick, 140 Dearborn st., Chicago, for improvements to water works system.—Geo. H. Storey, Superintendent.

South Bend, Ind.—Water Works Department will at once drill 20 additional wells.

Sioux City, Ia.—Extension of suction mains of city water works, installation of pump and engine to mate present one and establishment of special pumping station at Lend have been recommended to Councilman G. B. Healy, Superintendent of Parks and Public Property, as the best means of increasing the water supply by F. W. Capelen, Consulting Engineer, Minneapolis.

Underwood, Ia.—Plans are being prepared for installation of water works plant.
Natoma, Kan.—Citizens will vote June 1 on \$15,000 bonds for erection of water works system.

Topeka, Kan.—Bids will soon be received by City Water Works Department for stone work for well 60 ft. in diameter, 30 ft. deep; excavating will be done by city.—Jesse Shaw, Superintendent.

Homer, La.—Work will soon begin on installation of \$40,000 water works system.—A. R. Johnson, Mayor.

Marshall, La.—City is planning extensive improvements to water system.—W. S. Cunningham is interested.

Portland, Me.—Consulting Engineers Hazen & Whipple, 103 Park ave., New York City, have prepared plans for about 16 miles of 48-in. steel pipe for Portland water district.

Holyoke, Mass.—Governor has signed bill authorizing Board of Water Commissioners to issue \$150,000 bonds for the construction of storage reservoir at Fomer watershed.—T. J. Carmody, Chairman.

Russell, Mass.—City will purchase quantity of 4-in., 6-in. and 8-in. pipe.—E. D. Parks, Chairman Commission.

Woburn, Mass.—City proposes to expand this year about \$20,000 for new water mains.—Wm. B. Jones, City Engineer.

Flint, Mich.—City has authorized \$5,000 bond issue for water main extensions.

Galesburg, Mich.—Citizens have voted \$11,000 bonds for constructing water works.

Marquette, Mich.—Citizens have defeated proposal to issue \$76,000 bonds for extending water works intake.

Wyandotte, Mich.—Installation of meter system is being considered.

Ann Arbor, Minn.—Ann Arbor Water Co. will issue \$50,000 bonds for improvements to system.

Anoka, Minn.—Citizens have defeated proposition of issuing sums of \$15,000 and \$45,000 for purpose of erecting two dams about seven miles from city for supplying the city with water.

Eveleth, Minn.—Superintendent Forrestal, Water Works Department, has recommended installation of a 200,000-gal. pump.

Raymond, Minn.—Citizens have voted \$6,000 bonds for erection of water works.

La Plata, Mo.—Installation of municipal water plant is being considered.

Windsor, Mo.—Plans are being prepared by Engineers Archer, Rollins & Co., Beals Bldg., Kansas City, for a system of water works and sewers; cost \$40,000.

Fairbury, Neb.—Council has decided to call election on \$115,000 bonds for construction of water works.

Omaha, Neb.—Walnut Hill Improvement Club is urging installation of more water mains.

Orchard, Neb.—Installation of water works system is being considered.

Seward, Neb.—Council has decided to expend \$4,400 in securing supply of city water.

Valentine, Neb.—Installation of water system is being considered.

Allenhurst, N. J.—Citizens have voted \$12,000 bonds for water works.

Newark, N. J.—Board of Street and Water Commissioners has decided to construct 10-in. pipe sewers in Coeyman and Bleeker sts. and 12-in. sewers in Hackett st. and Treat pl.—M. R. Sherrerd, City Engineer.

Perth Amboy, N. J.—City has sold \$50,000 water bonds to K. M. Grant Co., New York.

La Salle, N. Y.—Village is considering purchase of plant of private water works company.—Frank Wilson, President Village Board.

Manchester, N. Y.—City will soon construct water system.

Niagara Falls, N. Y.—Citizens will vote on \$116,000 expenditure for extension of intake to Canadian Channel.

Newburgh, N. Y.—Board of Water Commissioners has instructed Engineer W. T. Blake, Jr., to prepare plans for completing work on dam at Washington Lake.

Pleasantville, N. Y.—Plans by Lederle & Provost, 39 W. 38th st., New York City, have been approved by State Board of Health for improvements to water supply and constructing sewerage system; total cost \$60,000.

Mandan, N. D.—City is considering installing water works system.

Portal, N. D.—International Commercial Club is interested in proposed construction of water works.

Akron, O.—E. W. Bemis, of Cleveland, has recommended construction of new plant, cost \$1,200,000, or purchase of the present plant at not over \$1,000,000 and the abandonment of Summit Lake as a source of supply because of impurities.

Canal Dover, O.—City has \$6,500 available for improvements to water plant.

Dunkirk, O.—Town has voted to issue \$21,000 water works bonds.

Hamilton, O.—Citizens will vote June 25 on \$50,000 water works extension bonds.

Ironton, O.—City will soon employ engineer to superintend improvements of local water system.

Mansfield, O.—Council is considering laying of 12-in. water pipe line through manufacturing district; cost about \$27,000.

Nottingham, O.—Citizens have voted \$15,000 bonds for extending water service.

Youngstown, O.—Council has voted \$120,000 bond issue for purchase of land in Milton Basin for establishment of water supply station.

Haleyville, Okla.—City is considering installation of water works system.

St. Helena, Ore.—Citizens have voted \$50,000 bonds for establishment of complete gravity water system.—H. F. McCormick Water Commissioner.

Catasauqua, Pa.—Cost of extending water mains into Third Ward is being estimated.

Harrisburg, Pa.—Plans are now being drawn for the high pressure pumping station and 1,000,000-gal. reservoir which will be constructed this year at Reservoir Park.—C. A. Hague, New York City, Consulting Engineer; G. G. Kennedy, Superintendent.

Meadville, Pa.—Conneaut Lake residents have voted to install complete water plant.

Williamston, S. C.—J. B. McCrary Co., Atlanta, Ga., has been selected to prepare plans for water works and sewer system; cost \$20,000.

El Paso, Tex.—Citizens will vote June 21 on proposed water bond issue.

Harlingen, Tex.—City Commissioners will consider election on bonds for water works and street improvements.

Coalville, Utah.—Coalville Water Works and Power Co. has been incorporated, capital \$30,000, to install water system.—T. J. Lewis, President.

Ephraim, Utah.—Ephraim Water Co. has asked for franchise.

Tacoma, Wash.—Bids will soon be called by Water and Light Department for sinking three or four additional wells at South Tacoma.

Shepherdstown, W. Va.—City desires prices on 1 mile 8-in., 1½ miles 6-in. and ¾ mile 4-in. iron pipe; also steel standpipe about 15 ft. diameter by 40 ft. to 60 ft. high.

Baraboo, Wis.—City Engineer French has recommended installation of meters.

Jefferson City, Wis.—Citizens have voted \$10,000 bonds for installation of water works.

Waterloo, Wis.—Citizens have voted \$28,000 bonds for installation of water works system.

Wausau, Wis.—Council has empowered Water Commission to install 600-h.p. engine and boilers at pumping station.—John F. Lamont, Mayor.

Kamloops, B. C., Can.—Citizens propose to petition Council to issue \$30,000 bonds for new reservoir and \$10,000 for new main on Victoria st.

Prince Albert, Sask., Can.—City will expend \$25,000 on improvement to water works system.

CONTRACTS AWARDED

Fall River, Mass.—Furnishing 6,000,000-gal. high-duty pumping engine, bids opened April 22, to H. R. Worthington Co., New York, N. Y., \$33,000, including foundation; company will allow \$1,000 for old pump.

Manistee, Mich.—Constructing steel water tank, 45 ft. in diameter and 55 ft. high, from plans of Chas. B. Burdick, 1212 Hartford Bldg., Chicago, Ill., to Manistee Iron Works Co.

Biloxi, Miss.—Additional water mains, cost \$5,000, to Cooper-Greer Co., Gulfport.

Youngstown, N. Y.—Installing filter plant, to J. M. Davidson, Pittsburg; pumps, to John P. Neal, Buffalo; two 15-h.p. gasoline engines, to W. C. James, representing Fairbanks, Morse & Co., Cleveland, \$2,311; filters, to Wm. B. Scaife & Son, Pittsburg, \$1,300.

Cincinnati, O.—Gas burners for pumping station, to Frank Nemans, \$973; piping same, to Gas and Electric Appliance Co., \$1,931.

Dallas, Tex.—Hauling 6-in. to 20-in. pipe, to E. L. Haralson, 80c. per ton.

Dallas, Tex.—Furnishing 600 tons of c.i. pipe, to U. S. C. I. Pipe and Foundry Co., \$38.35 per ton; also specials, \$50 per ton; bid permits substituting 56 joints of 24-in. pipe with 600 tons of 8-in. and reduction from \$28.90 to \$28.35 per ton.

BIDS RECEIVED

South Bend, Ind.—Drilling 20 proposed 10-in. wells, R. H. Kersey, city, 12-in. sealed pipe, \$1.50 per ft.; 10-in. well proper, \$3.45 per ft., and strainer, \$4.50 per ft.; W. N. Cater Constructing Co., 10-in. pipe, \$3.15 per ft.; 12-in. sealed pipe, \$1.90 per ft., and strainer, \$4.95 per ft.

LIGHTING AND POWER

Cullman, Ala.—City will install additional engines and dynamos in power house.

Dardanelle, Ark.—City has sold electric light plant to Russellville Light and Power Co. and granted company franchise to furnish electricity for lighting and power generated at dam on Illinois Bayou.

Milton, Fla.—City proposes to construct electric light plant; cost \$40,000; plans by Solomon-Norcross Co., Atlanta, Ga.—H. W. Clark, Mayor.

Orlando, Fla.—City is considering construction of electric light plant.

Dalton, Ga.—Citizens have voted \$20,000 bonds for improvement and extension of electric light system.

Donaldsonville, Ga.—Citizens have voted \$20,000 bonds for construction of electric light plant and improvement of water works.

Warrenton, Ga.—Citizens have voted \$12,000 bonds for electric light plant.

Bedford, Ind.—White River Power Co., of Bedford, has been incorporated to construct and operate an electric power plant; capital \$10,000.—J. T. Freeland, J. W. Monical and A. T. Fountain, Directors.

Boston, Mass.—Council is considering order requesting Superintendent of Streets to readvertise for bids for lighting side streets, parks and alleys with gas; about 2,000 lamps; only one bid from Rising Sun Co., \$23.60 a lamp per year, received.

Crookston, Minn.—Arthur M. Smith, Cleveland, O., has secured franchise for gas plant.—A. M. Childs, City Clerk.

Beatrice, Neb.—Morris Freshman and H. A. Wheeler, Beatrice, will erect concrete dam on Blue River for power purposes.

O'Neill, Neb.—City will install electric light system during summer.

Perth Amboy, N. J.—Public Service Corporation is considering construction of power house to supply light and power throughout Middlesex County; cost about \$500,000.

Woodbury, N. J.—Gloucester County is considering erection of electric light plant at almshouse.

Dayton, O.—City Engineer Cellarius has prepared specifications for proposed ornamental lighting contract.

Hamilton, O.—Citizens will vote June 25 on \$35,000 electric and \$75,000 gas works extension bonds.

Beaver Falls, Pa.—Council is considering question of electric lighting facilities for town.

Dunmore, Pa.—Council is considering placing of all wires underground.

Susquehanna, Pa.—Susquehanna Gas Co. has asked for perpetual lighting franchise.

Brookneal, Va.—Elder & Overacre, Lynchburg, are considering construction of electric light plant.

Bedford, Va.—F. R. Weller, Washington, D. C., has been selected to furnish plans for proposed hydroelectric plant.

Tacoma, Wash.—City Commissioners are considering the advisability of asking the taxpayers to favor another bond issue to enable city to acquire another power plant site.—W. C. Raleigh, City Engineer.

Wheeling, W. Va.—Consumers' Electric Co. has purchased site on which to construct electric light plant.

Minnedosa, Man., Can.—Contracts will soon be let for construction of hydroelectric power plant.

CONTRACTS AWARDED

Redonda Beach, Cal.—Reinforced chimney, 126 ft. high, to C. Leonardt, Hellman Bldg., Los Angeles, \$4,900; reinforced concrete boiler room, W. J. H. Martin Co., Stimson Bldg., Los Angeles, \$28,800; Pacific Light and Power Co., owner.

Atlantic City, N. J.—Installing generator exciter, switchboard and transformers at Absecon pumping station, bids opened May 3, to Ft. Wayne Electric Co., Fort Wayne, Ind., \$4,056.

Woodville, Pa.—Constructing power house for Allegheny County Home, from plans of And. McMaster, Architect, Curry Bldg., 4th ave. and Ross st., Pittsburgh, to Dawson Construction Co., May Bldg., Pittsburgh, \$21,765.

FIRE EQUIPMENT

Mobile, Ala.—Plans have been completed by Benz Bros. for erection of fire station for Broad st.

Fort Smith, Ark.—City will purchase 1,000 ft. of fire hose.—W. J. Johnston, Mayor.

Harrisburg, Ark.—Town is considering need of fire protection.

Little Rock, Ark.—City will erect \$3,500 fire station.

Tucson, Ariz.—Fire Marshal Coulon has recommended erection of substation in northern part of city and equipping it with engine; installation of equipment at city farm for suburb's protection; hose drying

tower; supply of couplers and other appliances; installation of automatic release chains in central station.

Colfax, Cal.—City is considering purchase of fire equipment.

Oakland, Cal.—Bids have been ordered advertised for purchase of proposed apparatus.—F. R. Thompson, City Clerk.

New Haven, Conn.—Erection of modern central fire station provided with powerful gasoline engine is being considered.

Dalton, Ga.—Citizens have voted \$5,000 bonds for fire department headquarters.

Champaign, Ill.—Fire Chief Ely has recommended purchase of 500 ft. 2½-in. cotton, rubber lined hose.

Chicago, Ill.—City is considering \$40,000 appropriation for repairing fire stations.

Danville, Ill.—Erection of fire station is being considered.

East St. Louis, Ill.—Mayor Silas Cook has recommended erection of three combination fire and police stations and equipment for same.

New Baden, Ill.—Bids will be received June 1 for furnishing fire hose and hose reels.—G. J. Munken, Village President.

Normal, Ill.—City is considering installation of fire alarm system.—C. E. Buck, Chairman Fire Committee.

Sterling, Ill.—Fire and Water Committee has recommended purchase of 500 ft. of hose.

New Orleans, La.—City Engineer Hardee has prepared plans for erection of proposed central fire station.

Rockland, Me.—City is considering purchase of combination chemical and hose wagon.

Havre de Grace, Md.—Street Improvement Commission will receive bids May 26 for erection of fire engine house.—Murray Vandiver, Chairman.

Milford, Mass.—Installation of fire alarm system is being considered.

Newburyport, Mass.—National Board of Fire Underwriters has reported that city needs supply of hose and chemical apparatus; also other improvements.

Northampton, Mass.—Firemen's Association desires to purchase another hand engine.

West Springfield, Mass.—Fire Chief Jones will purchase 50-h.p. auto truck.

Bay City, Mich.—Fire Chief T. K. Hardinge has recommended purchase of auto combination wagon.

Northfield, Minn.—Purchase of chemical engine is being considered.—R. C. Phillips, Chief.

Osakis, Minn.—Purchase of 300 ft. of hose has been ordered.—C. H. Sargent, Chief.

St. Paul, Minn.—City will purchase two steamers, one aerial truck, one combination wagon, one chief's auto and two supply wagons.—J. M. Clarkin, President Board Fire Commissioners.

Clarksdale, Miss.—Hook and ladder truck will be purchased.—J. Donohue, Chief.

Natchez, Miss.—Purchase of 1,000 ft. of hose is being considered.

Brookfield, Mo.—City is planning to erect fire station.—L. M. Matther, Chief.

Hermann, Mo.—City will purchase quantity of hose.—A. Wohlt, Chief.

Kennett, Mo.—City will form fire department and purchase hose and carts.

St. Joseph, Mo.—City is considering purchase of aerial truck and two autos.—P. F. Kane, Fire Chief.

Goldfield, Neb.—Data concerning fire protection will be received by Heath Steele, Inspection Department.

Omaha, Neb.—Fire and Police Board will investigate auto apparatus in use in other cities.—Chas. Salter, Fire Chief.

Bridgeton, N. J.—Council has appointed committee to secure an automobile engine for fire department.

Englewood Cliffs, N. J.—Site will be purchased by local firemen for erection of home.

Perth Amboy, N. J.—Bids will be received June 6, 8:30 p. m., for fire house in Amboy ave.—J. K. Jenson, Architect; Wilbur La Roe, City Clerk.

Nanuet, N. Y.—Nanuet Fire Company has plans out for house.

Rome, N. Y.—Fire Chief Leonard Briggs has recommended erection of another engine house.

Sayville, N. Y.—Election on purchase of apparatus will soon be held.—Henry Boeler, Village Clerk.

West Winfield, N. Y.—Site on Main st. has been secured for erection of engine house.

Columbus, O.—Fair Board has decided to erect fire house and several 1,000 bbl. capacity cisterns at State Fair grounds.

Cresson, Pa.—Council is considering erection of joint fire house and municipal hall; apparatus may be purchased.—Frank Struble, Secretary.

Elwood City, Pa.—Appropriation, \$1,000, is being considered for organizing and equipping fire department.

Mechanicsburg, Pa.—Fire company, newly organized, will need equipment.—J. H. McGlaughlin, Secretary.

Olyphant, Pa.—Council has decided to purchase 500 ft. of hose.

Westerly, R. I.—Special committee has recommended installation of three-circuit storage battery board, including battery and motor generator, nine fire alarm boxes and about 4½ miles of wire; also other improvements; \$2,700 appropriated.

Palestine, Tex.—Installation of fire alarm system is being considered. Address Mayor Bowers.

Norfolk, Va.—Lafayette Residence Park Improvement Board is considering purchase of hose.

Hollywood, Wash.—City has advertised for fire alarm system.

Appleton, Wis.—Mayor J. V. Saravan has recommended purchase of fire engine.

Racine, Wis.—Fire, Water, Police and Finance Committees are discussing feasibility of installing combination chemical and hose automobile truck at State st. engine house.

CONTRACTS AWARDED

Albany, N. Y.—Fire alarm boxes to Frederick Pierce Co., \$85 each.

Shamokin, Pa.—Engine house for Johnson City fire company, to Mifflin & Miller, Paxinos.

Wilkes-Barre, Pa.—Hose, 1,100 ft., to Eureka Hose Co., Philadelphia, \$1.10; 300 ft., to Vorhees Rubber Manufacturing Co., Jersey City, \$1 per ft.

BRIDGES

Pasadena, Cal.—City Engineer S. J. Van Ornum has begun work on preliminary survey for west approach to proposed low bridge over Arroyo Seco.

Fort Morgan, Col.—State Highway Commission is considering construction of proposed Bijou bridge.

Wilmington, Del.—Levy Court has rejected all bids for construction of reinforced concrete girder bridge at Nixontown Mill dam, St. George's Hundred.—Jas. Wilson, County Engineer.

St. Augustine, Fla.—Council has ordered erection of concrete bridge on South st.

Decatur, Ill.—Highway Commissioners will advertise for bids for bridge on Keeffe road.

Evansville, Ind.—County Council has appropriated \$60,125 for erection of two bridges.

Rockville, Ind.—County Council has appropriated \$10,000 for construction of the proposed bridge at Coxsie.

Shelbyville, Ind.—County Council has appropriated \$10,000 toward construction of bridge over Fox Ford in Marion Township.

Hutchinson, Kan.—County Commissioners are considering construction of a bridge across Salt Creek at 17th st.

Battle Creek, Mich.—Citizens have voted \$15,000 bonds for cement bridge on Kendall st.

Paterson, N. J.—County Freeholders are considering erection of bridge across Weisel Brook on Central ave.

Cincinnati, O.—Service Director Sundmaker has been instructed to continue improvement of Whittier st. by construction of a reinforced concrete bridge over C. L. & N. Railroad tracks; cost \$7,074.80.

Hamilton, O.—County Engineer L. A. Dillon is preparing plans for bridge over M. and E. Canal at Grand blvd.

Franklin, Pa.—Cherrytree Township has asked county to erect two bridges.

Hummelstown, Pa.—Consulting Engineer Mason D. Pratt, 14 S. Market st., Harrisburg, has been selected to prepare plans for a 3-span 250-ft. State highway bridge across Swatara Creek, for the Board of Public Grounds and Buildings, State Capitol, Harrisburg.

Jeannette, Pa.—Council is considering construction of a new bridge over the railroad on 2d st.

Pittsburg, Pa.—Council has passed an ordinance authorizing \$930,000 bond issue toward constructing bridge over Allegheny River at Point.

York, Pa.—County Commissioners will soon ask bids for construction of bridge.—George F. Bortner, President.

Bay City, Tex.—Matagorda County Commissioners have authorized election on \$100,000 bonds for construction of bridges and roads.

Clarksburg, W. Va.—County Court is considering construction of bridge over Elk Creek at E. Main st.; cost \$25,000.

Kenosha, Wis.—Construction of bridges at Middle st., Bronson st. and Washington Island is being considered.

Brockville, Ont., Can.—Town Council has inspected the plans and specifications for construction of six new bridges; bids will soon be asked.

CONTRACTS AWARDED

Denton, Md.—Reinforced concrete bridge over Nanticoke River, to Luton Bridge Co., York, Pa.

MISCELLANEOUS

Oakland, Cal.—Board of Public Works has recommended that bids be advertised for furnishing 1,000-gal. steel tank, oil-distributing wagon, also one patent dump wagon.

Sacramento, Cal.—City has decided to erect \$50,000 jail on H st.

Sacramento, Cal.—Mayor M. R. Beard has recommended erection of police headquarters.

Trinidad, Col.—Alderman Rascower, Chairman Street and Bridge Committee, will purchase rubbish cans, also sprinkler.

Dalton, Ga.—Citizens have voted \$125,000 improvement bonds.

Evansville, Ind.—Police Chief Corey is urging purchase of auto patrol wagon.

Indianapolis, Ind.—Stand holders in market house have asked that city install refrigeration plant.

Little Rock, La.—Village Council has decided to construct reservoir.

Fall River, Mass.—Superintendent of Buildings has prepared plans for \$100,000 addition to City Hospital.

Gloucester, Mass.—Bids have been rejected for erection of proposed addition at almshouse.

Bay City, Mich.—No bids were received for taking care of garbage.

Battle Creek, Mich.—Citizens have voted bonds for purchase of site for erection of proposed \$200,000 city hall.

Minneapolis, Minn.—Ways and Means Committee of Council has decided to issue \$200,000 park bonds.

Minneapolis, Minn.—City Water Works Committee is considering purchase of three automobiles.—E. T. Sykes, Supervisor.

Virginia, Minn.—Park Board is planning considerable work.—O. A. Poirer, Secretary.

Elizabeth, N. J.—Mayor Mravlag has recommended improvement of Elizabeth River.

Ventnor City, N. J.—Bids have been ordered advertised for collection of garbage.

Albany, N. Y.—Board of Contract and Supply has decided to permit Commissioner of Public Works Greenalch to experiment with use of oil on streets to keep down dust during summer.

Dunkirk, N. Y.—Citizens have voted \$100,000 bonds to build public dock.

Ithaca, N. Y.—Superintendent of Public Works St. John has prepared plan providing for relief channel in inlet valley, to protect city against floods; cost about \$20,000.

Saratoga Springs, N. Y.—Village is planning to expend \$250,000 before next May for lands for public park.

Fargo, N. D.—Establishment of park system is being considered.

Ashtabula, O.—Improving Ashtabula Creek, including approximately 360,327 cu. yds. earth excavation, 136,487 cu. yds. rock excavation, 2,160 lin. ft. I-beam bulkhead, to Inland Waterways Improvement Co., city, \$281,000.

Cincinnati, O.—North Cincinnati Business Men's Club is urging establishment of auto patrol service in Corryville.

Defiance, O.—Council is considering erection of addition to city hall.

Cresson, Pa.—Council is considering erection of joint municipal hall and fire house.—Frank Struble, Secretary.

Philadelphia, Pa.—Bids will be again advertised for proposed \$8,000,000 bond issue.—J. E. Reyburn, Mayor.

Rochester, Pa.—Plans will soon be prepared for erection of \$5,000 municipal building.—Councilman McDonald, Chairman Building Committee.

Providence, R. I.—Establishment of public market is being urged.

Paris, Tex.—City has sold \$85,000 public improvement bonds to Seasongood & Mayer, Cincinnati, O.

Racine, Wis.—Purchase of auto combination ambulance and patrol is being considered. Address Mayor Horlick.

Racine, Wis.—Architects Guilbert & Finston have completed plans for erection of \$2,500 refectionary in Horlick Park for Board of Park Commissioners.

Humboldt, Sask., Can.—Town is having plans prepared for erection of town hall.

CONTRACTS AWARDED

Hutchinson, Kan.—Street sprinkling, E. 7th ave., 6c. per lin. ft. and W. 10th ave., 7c., to M. M. Booker.

St. Paul, Minn.—Automobile, 60-hp., for fire insurance patrol, to Waterous Engine Works.

New York, N. Y.—Constructing railings, gates and stairways in the ferry house at St. George, Staten Island, to Geo. Hildebrand, 38 Park Row, \$10,329.

Cincinnati, O.—Furnishing police department with uniforms, three years, to Feckheimer Bros., \$32,620.75.

Columbus, O.—Construction of garbage collection stables, to Pat Shanahan, \$40,000.

Portland, Ore.—Building garbage crematory, to Public Works Engineering Co.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
California.....	Long Beach.....	May 30.....	Paving Railway, American and Appleton streets.....	Board of Public Works.
New York.....	Ft. Terry.....	May 30.....	Bldg. 2,500 lin. ft. macadam road and 2,500 ft. drain.....	Capt. F. T. Arnold, Constr. Q. M.
Saskatchewan.....	Regina.....	May 30, noon.....	Bldg 32,800 sq. yds. pavement, concrete foundation, also 50,000 sq. ft. concrete sidewalks.....	A. E. Chivers, City Clerk. H. L. Shaver, City Engineer. Board of Public Works.
Virginia.....	Lynchburg.....	May 30, noon.....	Bldg. 1,050 sq. yds. granolithic sidewalks.....	Geo. W. Jones, City Clerk.
New York.....	Niagara Falls.....	May 31.....	Paving certain streets.....	Ottie C. Bastian, Chm. D. P. W.
Indiana.....	Whiting.....	May 31, 8 p.m.....	Laying 2,440 sq. yds. of pavement.....	O. D. Bennett, Town Clk., Beaver.
Indiana.....	South Bend.....	May 31, 10 a.m.....	Grading and curbing La Salle ave.....	Wm. Murdoch, City Engineer.
South Dakota.....	Fedora.....	May 31, 2 p.m.....	Grading 5 miles road in town of Beaver.....	R. J. Cunningham, County Auditor.
New Brunswick.....	St. John.....	May 31, noon.....	Paving 5 streets.....	C. J. Goodier, Constr. Q. M.
Pennsylvania.....	Pittsburg.....	May 31, noon.....	Permanent improvement of 2 public roads.....	W. L. Tang, City Clerk.
New Jersey.....	Ft. Hancock.....	May 31, noon.....	Constructing roads and walks at Fort.....	S. B. Gardner, Eldora, Engr.
Iowa.....	Ft. Dodge.....	May 31, 5 p.m.....	Bldg. all permanent cement and temp. cem. block walks.....	Wm. A. Budroe, Sec'y D. P. Serv.
Iowa.....	Osage.....	May 31, 7:30 p.m.....	Concrete paving, 28,353 sq. yds. cement curb, etc., 8,160 ft.....	J. Barry Mahool, Pres. Bd. Awards.
Ohio.....	Dayton.....	May 31.....	Paving number of streets; also cement walks, etc.	N. Moberg, City Clerk.
Maryland.....	Baltimore.....	June 1, 11 a.m.....	Building granite pavements on two streets.....	C. C. Atchison, City Clerk.
Minnesota.....	Anoka.....	June 1, 6 p.m.....	Constructing cement sidewalks.....	J. T. McCracken.
Iowa.....	Albia.....	June 1, 2 p.m.....	Bldg. 4,060 sq. yds. paving and 4,023 lin. ft. curb and gutter.....	Alfred E. Steers, Boro. President.
Kentucky.....	Augusta.....	June 1.....	Bldg. 7,800 ft. 14-ft. wide pipe.....	H. B. Hayden, Village Clerk.
New York.....	Brooklyn.....	June 1, 11 a.m.....	Regulating and repaving various streets.....	W. S. Fulton, City Engineer.
Ohio.....	Pleasant Ridge.....	June 1, noon.....	Improving Cortelyou st.; macadam, curb and gutter.....	
Kansas.....	Topeka.....	June 1.....	Bldg. 40,000 lin. ft. cement curb and gutter.....	
Kansas.....	Ft. Riley.....	June 1, 10 a.m.....	Grading, 4,500 cu. yds.; macadam, 6,600 sq. yds.; concrete curb and gutter, 3,900 lin. ft.; driveway curb, 110 ft.; 6 concrete catch basins, 500 lin. ft. 12-in., 200 ft. 10-in. culvert pipe; 8,000 sq. ft. concrete walks; 950 sq. ft. concrete crossings, etc.	
Georgia.....	Ft. Screven.....	June 1, 11 a.m.....	Constructing roads, walks, etc., at post.....	Capt. W. M. Whitman, Act. Q. M.
New York.....	New Hartford.....	June 1, 4 p.m.....	Bldg. 6,800 lin. ft. comb. concrete curb and gutter, Genesee st.	Constr. Q. M.
Minnesota.....	Karlsted.....	June 1, 1 p.m.....	Building 1½ miles of grades.....	A. M. Scripture, Village Engr.
Ohio.....	Akron.....	June 2, noon.....	Improving several streets.....	H. O. Skatrud, Town Clerk.
Georgia.....	Clarksville.....	June 2, 8 p.m.....	Material and labor for 8,000 sq. yds. macadam pavement; 9,000 sq. yds. brick or concrete sidewalk.....	J. W. Gauthier, Dir. Pub. Service.
North Dakota.....	Washburn.....	June 2.....	Ten grades, including metal culverts.....	J. H. Hicks, Mayor.
New York.....	Dunkirk.....	June 2.....	Sheet asphalt resurfacing, W. 4th st.; paving Swan and Fox sts.; total, 19,000 sq. yds. J. M. Hackett, C.E.	Paul Meyer, County Auditor.
Ohio.....	Mt. Gilead.....	June 3.....	Westfield Road Imp. No. 2, Westfield twp.....	R. H. Heppell, City Clerk.
North Carolina.....	Wadesboro.....	June 3, 3 p.m.....	Paving 8-in. macadam, 18,000 sq. yds., tar or asphalt binder; concrete curb and gutter, 2,500 lin. ft.; cement walk, 6,000 sq. yds.; excav, 4,000 cu. yds. White & Piatt, Durham, C.E.	Clifton Sipe, County Auditor.
Kansas.....	Hutchinson.....	June 3.....	Improving 3 roads, 8, 4 and 3 miles long.....	
Ohio.....	Cincinnati.....	June 3, noon.....	Resurfacing Montgomery pike, in 2 twps.; Specification No 50.	
Wisconsin.....	Racine.....	June 4.....	Paving Douglas and Carlisle aves; resurfacing 13,280 sq. yds.	
Ohio.....	Marysville.....	June 4, 2 p.m.....	Constructing road.....	
Ohio.....	Arcadia.....	June 6, 3 p.m.....	Piking two roads.....	
Minnesota.....	Beardsley.....	June 6, 8:30 p.m.....	Bldg. 2,400 sq. ft. cement crossings.....	
North Dakota.....	La Moure.....	June 6.....	Bldg. sidewalks and crossings.....	
Ohio.....	Lucas.....	June 6.....	Improving Wayne ave.: paving, 27,266 sq. yds.; curb, 7,520 lin. ft.; 8, 10 and 12-in. sewer pipe, 1,592 ft., etc.	
Delaware.....	Darby.....	June 6, 8 p.m.....	Resurfacing 42,000 sq. yds. macadam, bituminous binder.....	
Indiana.....	Southport.....	June 6, 7:30 p.m.....	Building cement sidewalks.....	
Ohio.....	Maumee.....	June 6, noon.....	Improving Wayne st.: 27,266 sq. yds. paving and filler; 7,520 lin. ft. curb; 12,226 cu. yds. excav, sewer, etc.	
Indiana.....	Crawfordsville.....	June 6, 10 a.m.....	Bldg. Michael Woods gravel road in Madison twp.....	
Indiana.....	Tipton.....	June 6, 10 a.m.....	Bldg. 6 gravel roads, total length 37,281 ft.	
Indiana.....	Vernon.....	June 6, 11 a.m.....	Bldg. pike or stone road in Campbell Township.....	
Indiana.....	Fowler.....	June 6, 1 p.m.....	Bldg. Hess road in Union twp.: grade 27 ft. wide, paved with crushed blue limestone, 9 ft. wide, 10 in. deep; bridgrs, culverts, ditches, etc.; estimated cost, \$12,000.....	
Indiana.....	Williamsport.....	June 6, 1 p.m.....	Bldg. Lewis Young gravel road in Steuben township.....	
Indiana.....	Columbus.....	June 6, 7:30 p.m.....	Brick, asphalt, block or other paving, 7,000 sq. yds.	
Indiana.....	Mishawaka.....	June 6.....	Brick paving 3,100 sq. yds. bet. tracks. W. 2d st.	
Maine.....	Portland.....	June 6, noon.....	Improving roadway at Eastern Promenade.....	
Minnesota.....	St. Paul.....	June 6, 10 a.m.....	Improving White Bear and Lake Phelan road.....	
Indiana.....	Delphi.....	June 6, noon.....	Bldg. gravel road, Tippecanoe township.....	
Indiana.....	Kentland.....	June 6, 2 p.m.....	Bldg. macadam road.....	
New York.....	Albany.....	June 6, 1 p.m.....	Repairing and resurfacing many State highways.....	
New Jersey.....	Perth Amboy.....	June 6, 8:30 p.m.....	Grading Groost st.....	
Ohio.....	Wauseon.....	June 6.....	Improving Roads Nos. 70 and 71.....	
Kansas.....	Ft. Leavenworth.....	June 7, 11 a.m.....	Furn. 5-ton tandem-style road roller.....	
Indiana.....	Vincennes.....	June 7, 2 p.m.....	Bldg. gravel road in Harrison twp.....	
Indiana.....	Mt. Vernon.....	June 7, 2 p.m.....	Bldg. gravel road in Black twp.....	
Indiana.....	Monticello.....	June 7, noon.....	Bldg. stone road in Union and Big Creek twps.....	
Indiana.....	Madison.....	June 7, 1 p.m.....	Bldg. gravel road in Madison twp.....	
Ohio.....	Toledo.....	June 7, 10 a.m.....	Furnishing macadam materials for repairing Road 26.....	
Indiana.....	Wabash.....	June 7, 1 p.m.....	Bldg. gravel roads, 6 contracts.....	
Indiana.....	Rushville.....	June 7.....	Brick paving 3 miles, cost \$115,000.....	
Indiana.....	Marion.....	June 7, 2 p.m.....	Improving Soldiers' Home and 38th st. blvd.; cost, \$89,000.....	
Indiana.....	Huntington.....	June 7, 10 a.m.....	Bldg. Jonathan Rineason gravel road.....	
Indiana.....	Williamsport.....	June 7, 1 p.m.....	Bldg. 2 gravel roads in 4 twps., 5,316 ft. and 21,061 ft. long.....	
Indiana.....	Bloomfield.....	June 7, 2 p.m.....	Bldg. Wm. Jones and Wm. Hunter gravel and macadam roads.....	
Mississippi.....	Jackson.....	June 7, 3 p.m.....	Paving, 39,000 sq. yds.; curb, 10,000 lin. ft.; B. H. Klyce, C.E.	
New Jersey.....	Trenton.....	June 7, 2:30 p.m.....	Macadamizing, etc., 4 Co. roads; F. J. Eppelle, Co. Engr.	
Montana.....	Billings.....	June 7.....	Creosoted block pavement, 22,644 sq. yds.; vitrified brick, 32,040 sq. yds.....	J. Mason Ege, Dir. Bd. Freeholders.
Virginia.....	Richmond.....	June 7.....	Bldg. 4½ miles gravel road on Osborn turnpike.....	J. D. Matheson, City Clerk.
Pennsylvania.....	McKeesport.....	June 7, 4 p.m.....	Vit. brick paving, curbing, grading, Romine ave.....	County Clerk.
Minnesota.....	Albert Lea.....	June 7, 5 p.m.....	Paving 12,423 sq. yds. of Main st. with creosoted wood block, vit. brick, new rubber or sandstone.....	C. E. Soles, County Controller.
Pennsylvania.....	Harrisville.....	June 8, 2 p.m.....	Laying 8,244 sq. yds. brick pavement.....	
West Virginia.....	Princeton.....	June 8, noon.....	Macadam, tar or asphalt macadam or bitulithic paving; 3 mi. 5½ gravel roads, total length, 54,554 ft.; cost, \$38,292.....	
Indiana.....	Peru.....	June 8, noon.....	Bldg. highway in Center twp.....	
Indiana.....	Muncie.....	June 8, 10 a.m.....	Bldg. road on line of Wabash and Huntington Cos.....	
Indiana.....	Huntington.....	June 9, 10 a.m.....	Bldg. 21,446 ft. free gravel road. Cass and Carroll Counties.....	
Indiana.....	Logansport.....	June 9.....	Macadamizing roads, concrete walks, gutters, etc.	
Kansas.....	Ft. Sam Houston.....	June 9, 11 a.m.....	Paving 30,000 sq. yds.; concrete curb and gutter, storm sewers and outlet. Burns & McDonnell, Scarratt Bldg., K. C., Mo.....	
Ohio.....	Cincinnati.....	June 10, noon.....	Grading two roads.....	
Indiana.....	Vincennes.....	June 11, 2 p.m.....	Bldg. 6,391 ft. gravel roads in Johnson township.....	
Idaho.....	Boise Barracks.....	June 11.....	Macadam road, 1,600 ft., 20 ft. wide, at Barracks.....	
West Virginia.....	Benwood.....	June 13, 7 p.m.....	Furn. and setting about 7,000 ft. of curb.	
Florida.....	Cleveland H'gts.....	June 14, noon.....	Bldg. sidewalks.....	
Indiana.....	Ft. Barrancas.....	June 15, 11 a.m.....	Resurfacing roadway.....	
Montana.....	Peru.....	June 15, noon.....	Bldg. macadam road in Peru twp.....	
Montana.....	Billings.....	June 21, 8 p.m.....	Creosoted block paving, 59,856 sq. yds., Dist. No. 53.....	J. D. Matheson, City Clerk.
SEWERAGE				
Ridge Island.....	Ft. Mansfield.....	May 30.....	Constructing 1,000 lin. ft. of sewer at fort.....	Capt. F. T. Arnold, Constr. Q. M.
Saskatchewan.....	Regina.....	May 30, noon.....	Bldg. storm water and sanitary trunk sewers and disposal works: 10,761 ft. 30-in., 3,248 ft. 48-in., 2,369 ft. 66-in., 8,392 ft. 72-in. sewers; furn. 11,500 bbls. Portland cement, reinforcement, sewer pipe, manhole covers and specials, 700 cords field boulders for filters, 3,600 bbls. Portland cement for disposal works.....	A. J. McPherson, Consulting Engr.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
SEWERAGE (Continued)				
Iowa	Perry	May 31, 7:30 p.m.	Furn. 1,050 ft. 24 in. pipe, 685 ft. 18 in., 250 ft. 12 in., 700 ft. 8 in. pipe, and 600 ft. of open ditch, manholes, etc.	Chas. Wilson, City Engineer.
Missouri	St. Louis	May 31, noon	Bldg. second section So. Harlem Sewer: 2,920 ft. 14x11 1-4 ft., and 4,031 ft. 12x9 3-4 ft., rein. concrete, and 1,042 ft. 7.5 ft. and 100 ft. 7-ft. brick sewer, etc.; deposit, \$5,529.	M. Reber, Pres. Bd. Pub. Imps.
Oklahoma	Oklahoma City	May 31	Extension to East Side sanitary main sewer, also main storm sewer, Brauer ave. and 4th st.; also sanitary sewer, 2 blocks Capitol Hill.	
Ohio	Marble Cliff	May 31	Bldg. sewer system and sewage disposal plant.	Bob Parman, City Clerk.
Idaho	St. Maries	May 31, 6 p.m.	Bldg. sewer system.	C. Newhouse, Village Clerk.
Wisconsin	Delavan	June 1, 11:30 a.m.	Bldg. sewers in several streets.	J. E. Williams, Village Clerk.
New York	Binghamton	June 1	Building sewers in four streets.	O. R. Rice, City Clerk.
Ohio	Norwalk	June 1	Bldg. storm and sanitary sewers.	D. C. Herrick, City Clerk.
Oregon	Independence	June 1, 8 p.m.	Bldg. complete sewer system.	John E. Soisson, Dir. Pub. Serv.
New York	Amsterdam	June 1, 8 p.m.	Furn. and laying complete 8 and 10-in. sewers in 4 streets.	W. S. Kurke, City Recorder.
New Mexico	Ft. Wingate	June 1, 11 a.m.	Labor and material for bldg. sewer system at Fort.	A. T. Young, Sec'y Sewer Comrs.
Iowa	Waukon	June 1, 7:30 p.m.	Bldg. sewer system & disposal plant; Iowa Eng. Co.	Constructing Q. M., U. S. Army.
Kansas	Ft. Riley	June 1, 10 a.m.	Bldg. 6 conc. catch basins, 500 ft. 12-in., 200 ft. 10-in. culvert	C. M. Stone, City Clerk.
Kansas	Caldwell	June 1, 3 p.m.	Constructing sewer system; Burns & McDonnell, C.E.	W. M. Whitman, Q. M.
Illinois	Jacksonville	June 2, 11 a.m.	Excav. 174,000 cu. yds. for sewers and ditches.	J. R. Swartzel, City Clerk.
Wisconsin	Appleton	June 3	Bldg. concrete sewer in Fifth Ward.	C. W. Brown, Scott Block, Engineer.
Maine	Ft. Williams	June 4, 10 a.m.	Bldg. additions to sewer system.	C. H. Vinal, City Engineer.
Montana	Ft. Missoula	June 6	Bldg. sanitary sewer system; also water disposal system.	Capt. C. F. Humphrey, Jr., Q. M.
New Jersey	Plainfield	June 6, 8 p.m.	Bldg. sanitary sewers: 4,210 ft. 8-in. pipe, 6 to 10 ft. deep; 11 manholes, 2 flush manholes, 150 branches, 440 ft. 4-in. vit. pipe house connections.	Maj. A. B. Shattuck, Constr. Q. M.
Pennsylvania	Marcus Hook	June 6, 8 p.m.	Building clay pipe sewers and pumping station.	Andrew J. Gavett, Engineer.
New Jersey	Plainfield	June 6, 8 p.m.	Bldg. san. sewers: 4,210 ft. 8 in. vit. pipe, 6 to 10 ft. deep; 11 manholes, 2 flush manholes, 150 branches, 440 ft. 4-in. vit. pipe house connections.	W. E. Mallon, Chm. Sewer Com.
Pennsylvania	York	June 6	Bldg. sewers with laterals and manholes, 4 streets.	A. J. Gavett, Engineer-in-Charge.
New Jersey	Trenton	June 7	Bldg. sewer in Tyrell ave.	Harry Washers, Chm. Bd. Pub. Wks.
New York	Niagara Falls	June 7	Bldg. sewer in Highland ave. and repairing trunk sewer.	H. B. Salter, City Clerk.
Missouri	St. Louis	June 7	Bldg. North Harlem Joint Dist. Sewer, 1st Sec.; cost, \$48,000.	Board of Public Works.
Nebraska	Havelock	June 7, 8 p.m.	Bldg. sewer system: 2,938 ft. 8-in., 5,378 ft. 10-in., 2,000 ft. 12-in., 5,840 ft. 15-in. vit. pipe, 41 manholes and rein. concrete outlet; Grant & Letton, Lincoln, Engrs.	W. B. Dryden, Sec'y Bd. Pub. Imp.
Tennessee	Chattanooga	June 7, 2:30 p.m.	Bldg. sewage pumping station; furn. and install. 2 centrifugal pumps, electric motors, etc.	C. A. Currie, City Clerk.
Ohio	Middletown	June 7, noon	Bldg. concrete sewer.	H. F. Van Dusen, Chm. Bd. Pub. Wk.
Ohio	Sandusky	June 8	Rebuilding and enlarging lateral sewer, 2 parts, 4 streets.	Chas. C. Dell, Dir. Public Service.
West Virginia	Princeton	June 8, noon	Constructing 10 to 30 in. sanitary sewers and appurtenances: 24-in. c. i. pipe, manholes, etc.; cost, \$30,000.	John Bing, Dir. Pub. Service.
West Virginia	Huntington	June 9, 1 p.m.	Bldg. sewer in alley.	F. R. Van Antwerp, Chief Engr.
Kansas	Abilene	June 9, 2 p.m.	Bldg. storm sewers, outlet, paving, curbing, etc.	City Commissioners.
Oklahoma	Ft. Sill	June 10, 10 a.m.	Bldg. sewage purification plant, reservoir, etc.	A. W. Rice, Mayor.
Missouri	St. Louis	June 14	Bldg. Glaise Creek Joint Dist. Sewer, Sec. 1, with branch, of rein. concrete and brick in cement; cost, \$180,000.	Capt. David H. Stone, Constr. Q.M.
Ohio	Cleveland H'gts	June 14, noon	Bldg. sewers in Maple road.	W. B. Dryden, Sec'y Bd. Pub. Imp.
Missouri	St. Louis	June 14	Bldg. Sec. 1, River des Peres foul water sewer: brick laid in Portland cement mortar; 5,065 ft. 9x9 ft. horseshoe shape, and 1,440 ft. 9-ft. circular sewer.	N. N. Canfield, Village Clerk.
Texas	Belton	June 14, 8 p.m.	Bldg. sanitary sewer system and purification plant: 4,017 ft. 12-in., 718 ft. 10-in., 18,680 ft. 8-in. vit. pipe; 67 manholes; 10 flush tanks; 3,556 cu. yds. earth excav., 118 cu. yds. rein. concrete, 500 cu. yds. broken stone, etc.	W. B. Dryden, Sec'y Bd. Pub. Imp.
Missouri	St. Louis	June 21	Bldg. River des Peres foul water sewer, 2d section.	C. B. Smith, Sec'y Belton Sewer Co.
				W. B. Dryden, Sec'y Bd. Pub. Imp.
WATER SUPPLY				
Texas	Dallas	May 30, 3 p.m.	Furnishing 2 air compressors for new wells.	John King, City Auditor.
North Dakota	Ellendale	May 30, 8 p.m.	Laying 1,450 ft. 4-in. water main on Fifth st.	M. W. Simpson, City Clerk.
New York	No. Tonawanda	May 31, 8 p.m.	Bldg. concrete flue and cement curb at pumping station.	S. K. Kilsrud, County Auditor.
Iowa	Waukon	May 31, 2 p.m.	Bldg. water works system for County home.	
Michigan	Calumet	May 31, 6 p.m.	Bldg. water tower and plant, pump house, well and distribution system.	J. C. Mick, Village Clerk.
Wisconsin	Waterloo	May 31, 7:30 p.m.	Drilling 10 in. well, 300 to 700 feet deep, and furn. casing.	F. E. Peschel, Village Clerk.
Iowa	New Hampton	June 1, 7:30 p.m.	Furn. and laying 3,000 ft. 4 in. c. i. water mains.	F. B. Stuke, City Clerk.
Indiana	Hammond	June 1, 10 a.m.	Furn. and laying 3,000 lin. ft. 4-in. c. i. pipe and connections.	A. R. Ebert, Pres Bd. Pub. Serv.
Kansas	Caldwell	June 1, 3 p.m.	Bldg. extension to water works system.	L. M. Horton, Mayor.
Maryland	Leslie	June 1	Bldg. 100,000-gal. clay-lined reservoir, furn. c. i. pipe, etc.	G. A. M. Johnson.
South Dakota	Ft. Meade	June 1, 10 a.m.	Bldg. concrete dam and clearing reservoir site.	Constr. Q. M., U. S. Army.
Illinois	New Baden	June 1, 7:30 p.m.	Bldg. w. w. system c. i. pipe, vaves, steel tower, tank, etc. Fuller-Coulter Co., Chemical Bldg., St. Louis, Mo.	Geo. J. Munken, Village President.
Tennessee	Mt. Pleasant	June 1	Bldg. \$40,000 gravity w. w. system; 8-in. flow line 10 miles long, c. i. or wood pipe; concrete receiving basin, etc. Granbery Jackson, C.E.	
Minnesota	Blackduck	June 2, 8 p.m.	Furn. Fire Underwriters pump, complete.	W. H. Long, Mayor.
Illinois	Danville	June 3, noon	Rebldg. concrete dam, D. W. Mead, C.E., Madison Wis.	D. D. Roffle, Recorder.
Maine	Ft. Williams	June 4	Bldg. additions to water and sewer systems.	Danville Water Co.
Arkansas	Ft. L. H. Roots	June 6	Erecting 150,000-gal. steel tank.	Capt. C. F. Humphrey, Q. M.
Montana	Pt. Missoula	June 6, 9 a.m.	Bldg. sewer and water-distributing system, 300,000-gal. steel tank and 100-ft. trestle, pumping station, boilers, pumps, valves, etc.; also concrete walks and curbing.	Constructing Q. M., U. S. Army.
Florida	Jacksonville	June 6	Bldg. 3,000,000-gal. covered rein. concrete reservoir.	Maj. A. B. Shattuck, Q. M.
Iowa	Eldora	June 6, 7:30 p.m.	Furn. 2,000 ft. 4-in. c. i. water pipe.	R. N. Ellis, Supt. Water Works.
Pennsylvania	Marcus Hook	June 6, 8 p.m.	Bldg. pumping station and clay pipe sewers.	Stephen Sayer, Chm. Purch. Com.
Minnesota	Nicollet	June 6, 6 p.m.	Laying water main.	W. E. Mallon, Chm. Sewer Com.
Indiana	South Bend	June 6, 10 a.m.	Making water connections.	M. J. Frey, Village Recorder.
Iowa	Corydon	June 6, 7:30 p.m.	Drilling artesian well.	O. C. Bastian, Chm. Bd. Pub. Wks.
New York	Newburgh	June 6, 7 p.m.	Completing abandoned contract, Washington Lake.	J. J. Bower, Town Clerk.
Minnesota	Intern'l Falls	June 7, 8:30 p.m.	Laying water pipe.	Wm. Hawks, Water Commissioner.
Connecticut	Waterbury	June 7, 8 p.m.	Bldg. \$300,000 Morris reservoir: 1,000 cu. yds. excav. trenches, 400 cu. yds. rock, 25,600 cu. yds. 1:3:6 and 5,000 cu. yds. 1:3:5 concrete masonry; 2,960 cu. yds. concrete block; 525,000 cu. yds. rolled embankment; 5,900 cu. yds. crushed stone; 8,900 cu. yds. paving; seeding, loaming, etc.	R. C. Frazier, Village Recorder.
Nebraska	Havelock	June 7, 8 p.m.	Bldg. extensions to w. w. system: 2 wells and suction hose, 125,000-gal. rein. concrete reservoir, 75,000-gal. steel tank on tower, pumps, elec. motors, etc.; 8,850 ft. 4-in., 10,100 ft. 6-in., 5,300 ft. 8-in. mains, valves, hydrants, etc.	R. A. Cairns, City Engineer.
Texas	Athens	June 8	Bldg. water system, complete.	C. A. Currie, City Clerk.
Oklahoma	Ft. Sill	June 10, 10 a.m.	Bldg. 500,000-gal. reservoir, etc.	O'Neil Eng. Co., Dallas.
Nebraska	Petersburg	June 10, 4 p.m.	Bldg. water works system.	Capt. David L. Stone, Q. M.
Michigan	Detroit	June 14, noon	Erecting engine-room super. at new pumping station.	Wm. Ganiard, Mayor.
Missouri	Huntsville	June 14	Bldg. \$30,000 w. w. L. G. Knapp & Co., N. Y. Life Bldg., Kansas City, Engineers.	Benj. F. Guiney, Sec'y Water Bd.
West Virginia	Clarksburg	June 15, noon	Material and labor for laying 28,400 ft. 16 to 4-in. c. i. main, 50 gate valves and boxes; 35 fire hydrants; also 3,000,000-gal. mech. filter plant, 200,000-gal. clear water basin, 600,000-gal. rein. concrete coagulating basin, with brick and steel filter bldg.; two 3,000,000-gal. low-lift cent. pumps, driven by high-speed engines, 3,000,000-gal. multi-stage turbine high-lift pump and turbine, two 200-h.p. water tube boilers, brick and steel boiler house, 1,000,000-gal. rein. concrete reservoir, 16-in. c. i. suction line, etc. Hering & Fuller, 170 Broadway, New York City, Engineers.	J. B. Holman, City Clerk.
Kentucky	Dayton	June 20, 8 p.m.	Franchise for bldg. and operating water system.	W. H. Lewis, Pres. W. W. & Sew. Bd. Will C. Martin, City Clerk.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
BRIDGES				
Ohio.....	St. Clairsville.....	May 31, 1 p.m.....	Bldg. bridge at Barton.....	E. E. Shepherd, County Auditor.
Texas.....	Arcadia.....	May 31, 8:30 p.m.....	Bldgs. from 50 to 100 bridges.....	B. F. Johnson, Sec'y Drain Dist. No. 1.
Washington.....	Tacoma.....	May 31, 9 a.m.....	Building reinforced concrete viaduct.....	Owen Woods, Com'r Public Works.
Pennsylvania.....	Butler.....	June 1, noon.....	Bldg. several bridges.....	W. B. Scott, Clk. Co. Comrs.
Louisiana.....	Gretna.....	June 1.....	Constructing steel bridge over canal in Jefferson Parish.....	E. M. Hubert, Sec'y Police Jury.
Utah.....	White Rocks.....	June 1.....	Bldg. substructure of \$18,000 steel bridge at Vintah and Ouray Indian agency. M. J. Patterson Constr. Co., Denver, Colo., has contract for superstructure.....	
Nebraska.....	McCook.....	June 1, noon.....	Bldg. wooden bridge over Republican river on County line.....	Com'r Indian Affairs, Wash., D. C.
Nebraska.....	Lincoln.....	June 2, 2 p.m.....	Bldg. all bridges ordered during 1910.....	County Clerk.
North Dakota.....	Fargo.....	June 2, noon.....	Bldg. 5 bridges, 20, 80, 60, 80 and 110 ft. long; repairing 6 bridges; bldg. 7 culverts 3x24 to 6x32 ft.....	H. E. Wells, Clk. Lancaster Co.
New York.....	New York.....	June 2, 4 p.m.....	Making test borings at proposed site of Hudson river bridge.....	Arthur G. Lewis, County Auditor.
Missouri.....	Kansas City.....	June 3.....	Bldg. 6-ft. stone arch culvert.....	Interstate Bridge Comm., 115 B'way.
Minnesota.....	Taylor Falls.....	June 3, 1 p.m.....	Bldg. rein. concrete or steel arch bridge over St. Croix river.....	S. A. Boyer, County Clerk.
Michigan.....	Grand Rapids.....	June 3, 3 p.m.....	Repairs to piers at Pentwater, Mich.	L. P. Wolff, Essex Bldg., St. Paul.
New York.....	Massena.....	June 4.....	Furn. material and bldg., complete, 600 ft. highway suspension bridge over River de Grasse.....	C. S. Riche, Maj., U. S. Engrs.
Illinois.....	Stronghurst.....	June 4, noon.....	Building 3 bridges.....	Barney S. O'Neill, Chm. Town Com.
Indiana.....	Crown Point.....	June 6, noon.....	Bldg. rein. concrete bridge in town of Lowell.....	P. A. Stamp, Township Clerk.
Indiana.....	Hammond.....	June 6, noon.....	Bldg. steel lift or stationary bridge over Grand Calumet river 90x66 ft.; cement abutments.....	C. A. Johnson, County Auditor.
Indiana.....	Jeffersonville.....	June 6, 11 a.m.....	Bldg. new bridge over Logan Creek, Charlestown twp.....	Peter Nathand, County Auditor.
Mississippi.....	Tunica.....	June 6.....	Furn. cor. galv. iron culverts: five 48-in. diam., 26 ft. long; five 24-in., 20 ft. long; thirty 14-in., 20 ft. long.....	
Michigan.....	Jackson.....	June 6.....	Bldg. 68x59.5 ft. rein. concrete or steel span over Grand river.....	F. L. Hope, Clk. Bd. Co. Supervisors.
Ohio.....	Warren.....	June 6, 1 p.m.....	Bldg. superstructure of bridge over Grand river.....	A. W. Hall, City Engineer.
Indiana.....	Tipton.....	June 6.....	Bldg. three bridges.....	Fred Stone, County Auditor.
Minnesota.....	Duluth.....	June 6.....	Bldg. 2 bridges, 42 and 70-ft. spans, steel or rein. concrete; culvert, 14 x 45 ft.; painting bridges, etc.....	Board of Commissioners.
Indiana.....	Ft. Wayne.....	June 7, 10 a.m.....	Building concrete culverts and abutments, steel bridges, etc.....	Odin Holden, County Auditor.
Virginia.....	Richmond.....	June 7.....	Bldg. reinforced concrete bridge.....	Geo. W. Lindemuth, Auditor.
Indiana.....	Covington.....	June 7.....	Bldg. concrete arches and steel bridges.....	County Clerk.
Indiana.....	Madison.....	June 7, 1 p.m.....	Bldg. and repairing bridges for County.....	W. B. Gray, County Auditor.
Illinois.....	Shelbyville.....	June 7, 10 a.m.....	Bldg. and repairing bridges for County.....	G. F. Crozier, County Auditor.
Indiana.....	Highland Park.....	June 7, 8 p.m.....	Bldg. 6 rein. concrete girder type bridges.....	G. W. Huntington, County Auditor.
Indiana.....	Valparaiso.....	June 7.....	Bldg. 2 township bridges.....	H. L. Bowen, Com'r. Pub. Wks.
Minnesota.....	Hastings.....	June 8.....	Bldg. steel and concrete approach to Cedar ave. bridge.....	G. F. Stinchfield, Engineer.
Indiana.....	Greencastle.....	June 8.....	Bldg. 3 concrete bridges and 8-ft. span steel bridge.....	P. A. Hoffman, County Auditor.
Missouri.....	St. Louis.....	June 21.....	Bldg. foundations and concrete work for viaduct, also approaches on Kings highway; deposit, \$10,225.....	Alex. Lane, County Engineer.
Manitoba.....	Winnipeg.....	June 28, 11 a.m.....	Constructing concrete piers, Brown and Brant st. bridge.....	M. Reber, Pres. Bd. Pub. Imp.
Washington.....	Stevenson.....	July 5, 1 p.m.....	Bldg. bridge over Little White Salmon river, Sec. 15, Twp. 4.....	M. Peterson, Sec'y Bd. Control.
Virginia.....	Leesburg.....	July 25.....	Bldg. rein. concrete or iron bridge across "The Dutchman"; 55-ft. span, 12-ft. roadway, and abutments; also for bldg. bridge over Little River, near Aldie.....	Bd. of Comrs, Skamania County.
LIGHTING AND POWER				
Texas.....	Ft. Crockett.....	May 31, 2 p.m.....	Constructing electric lighting system.....	J. J. Crim, Chm. Co. Comrs.
Minnesota.....	Morton.....	May 31.....	Bldg. \$20,000 electric lighting plant for Wherland Elec. Co.....	
Maine.....	Ft. McKinley.....	June 2, 10 a.m.....	Remodeling electric lighting system at fort.....	
Kansas.....	Hays.....	June 2, 10 a.m.....	Building plant for power, heat, water supply and sewerage at State Normal School.....	
Massachusetts.....	Ft. Andrews.....	June 6, 10 a.m.....	Bldg. electric lighting system at fort.....	
North Dakota.....	La Moure.....	June 8.....	Furn. and install. 150 light gasoline lighting plant at Court House, also comb. gas and electric light fixtures, complete.....	
Minnesota.....	Ft. Snelling.....	June 11, 10 a.m.....	Remodeling electric light plant at Fort.....	
Idaho.....	Idaho Falls.....	June 17, 3 p.m.....	Bldg. hydroelectric plant and pumping station.....	
Florida.....	West Palm Beach	July 1.....	Constructing electric light plant, etc.....	
MISCELLANEOUS				
Ohio.....	Cleveland.....	May 31, noon.....	Exclusive right to pick all waste, etc., on E. 9th st. dump.....	A. B. Lea, Dir. of Public Service.
Brit. Columbia.....	Vancouver.....	May 31, 3 p.m.....	Installation of garbage destructor plant at Bridge st. yard on False Creek to destroy at least 70 tons mixed garbage per 24 hours, complete; bidders submit plans, etc.....	
New York.....	St. George, S. I.	May 31, noon.....	Furn. and deliver 300 bbls. Portland cement.....	
Indiana.....	Franklin.....	June 6, noon.....	Furnishing voting machines.....	
New York.....	White Plains.....	June 6, 8 p.m.....	Garbage contract for one year from June 15.....	
Alabama.....	Montgomery.....	June 6, noon.....	Two steam fire engines, Nos. 1 and 2; two comb. chemical and auto. hose cars; 6,000 ft. 2½-in. rubber-lined cotton hose.....	
California.....	Vallejo.....	June 6.....	Bldg. \$225,000 2-story steel and granite Court House.....	
California.....	Oakland.....	June 8, 11 a.m.....	Bldg. fire engine house. Walter D. Reed, Arc. hitect.....	
Iowa.....	Logan.....	June 9.....	Bldg. \$100,000 Court House. Jos. Mills, Arch., Detroit.....	
Minnesota.....	Virginia.....	June 6, 8 p.m.....	Furn. 1,000 ft. 2½ in. cottcn. rubber-lined hose.....	
Minnesota.....	Eveleth.....	June 7, 8 p.m.....	Furn. 2,000 ft. 2½ in. rubber-lined hose.....	
Ohio.....	Toledo.....	June 10, noon.....	Disposal of garbage.....	
California.....	Bakersfield.....	June 13.....	Erecting 3-story and basement Court House.....	
Nebraska.....	Holdredge.....	June 13.....	Bldg. \$85,000 Court House. W. F. Germandt, Archt.....	
New York.....	Elmira.....	June 13, 5 p.m.....	Bldg. city hall.....	
Illinois.....	Monmouth.....	June 14, noon.....	General contract for erection of hospital; separate bids for electric wiring and plumbing.....	
Minnesota.....	St. Paul.....	June 14.....	Furn. Second size steam fire engine.....	
West Virginia.....	Wheeling.....	June 15, 11 a.m.....	Bldg. Pierce dam foundation and extension of piers, Dam 13.....	
Pennsylvania.....	Philadelphia.....	June 17.....	Furn. dredge, tugboat and dump scows.....	
Florida.....	West Palm Beach	July 1.....	Hydraulic dredging, 300,000 cu. yds.....	

TOO LATE FOR CLASSIFICATION

STREET IMPROVEMENTS

Selma, Ala.—Dallas County has voted \$250,000 bonds for good roads.

New Haven, Conn.—New bids will be asked for laying sidewalks as ordered.

Albia, Ia.—City will lay 4,000 yds. brick paving and 4,000 ft. curb and gutter; contract soon.—Hall & Adams, Centerville, Engineers.

Knoxville, Ia.—City will lay 2 mi. concrete paving; contract soon.—Hall & Adams, Centerville, Engineers.

Baltimore, Md.—State Roads Commission has received no bids for 4½ mi. of roads in Allegany and Garrett counties; specifications will be readvertised.

Baltimore, Md.—Council is considering \$1,000,000 loan ordinance for proposed Jones Falls boulevard.

Crystal Falls, Mich.—City will spend be-

tween \$30,000 and \$40,000 in paving Superior ave. the coming summer.

Eveleth, Minn.—Council has ordered many cement sidewalks built at expense of the abutting property owners.

Virginia, Minn.—Council has ordered bids advertised for paving about one mile of streets.

Elizabeth, N. J.—County Roads Committee of Union County Board of Freeholders has decided to construct four new roads through western part of the county; total length will be about 8½ miles and cost about \$150,000.

Ballston Spa, N. Y.—Village has sold \$17,000 bonds to Ballston Spa National Bank to pay for State road to be built in village.

Elmira, N. Y.—Board of Public Works has decided to pave East Union st.

Greenville, Tex.—Citizens have voted

\$100,000 bonds to pave ten miles of streets.

Spokane, Wash.—City Engineer Morton Macartney has completed plans for proposed subway to extend beneath Northern Pacific railway at Walnut st.; cost \$16,000.

CONTRACTS AWARDED

Roseville, Cal.—Improvement of Main st. to F. G. Neff and Chester Purdy, 27c. per cu. yd.; wrought iron pipe, 15c. per cu. ft.; Vernon st. to J. H. Faulkner, 26c. per cu. yd. for dirt handled; pipe, 8c. per lin. ft.

Stockton, Cal.—Delivering, hauling and spreading 15,000 tons macadam on Acampo-Lockeford Road to Cotton Bros. of San Francisco, \$1.85 per ton; for improving Lodi-Woodbridge road, 1.67 miles, to C. Morein, \$1.95 per ton.

Bridgeport, Conn.—Paving approaches to Congress st. bridge to A. J. Langefeld, Hartford.

Winsted, Conn.—Construction Winsted-Norfolk road, 3 mi. to John D. Michiel, Torrington; two miles of road leading out of city to Lynn Construction Co., Lynn, Mass.

Evansville, Ind.—Improvement of Governor st. with Carlyle brick to Hollerback & May, \$1.45 per yd.; curbing 40c. per running ft.

Webb City, Mo.—Paving to Webb City Paving Co., three contracts (1) 3,913 sq. yds. asphaltic macadam, 77c., including 2,054 cu. yds. earth excavation; (2) 6,411 sq. yds. asphaltic macadam, 48c.; (3) 1,010 cu. yds. excavation, 6,366 sq. yds. macadam, 40c.; 2,907 cu. yds. excavation; to Loyd Burree (4) 3,248 sq. yds. macadam, 40c., 1,310 cu. yds. excavation; to Nelson Draper Construction Co. (5) 5,691 sq. yds. asphalted macadam, 56c., 1,940 cu. yds. excavation; totals of bids: Webb City Paving Co. (1) \$3,013, (2) \$3,077, (3) \$2,546; Nelson Paving Co. (2) \$3,206; B. C. Aylor (3) \$2,578; L. Burres (4) \$1,399; Webb City Co. (4) \$1,332, (5) \$3,301; Nelson Draper Co. (5) \$3,187; setting new curb, contracts 1, 2, 3, 4, to Webb City Paving Co., as follows: 2,403 lin. ft., 70c.; 3,067 lin. ft., 64c.; 1,280 lin. ft., 54c.; 2,107 lin. ft., 69c.; sidewalks, to Webb Co., 8,853 sq. ft., \$2.23, 8,019 sq. ft., \$1.75; price including grading.—A. J. McKenzie, City Engineer.

Duluth, Minn.—Paving Beknab st., to Ed. Johnson, \$67,005.31.

Paterson, N. J.—Repairs and extensions, Notch road, to Francesco Brothers; Van Houten ave., to F. J. Marley; Kingsland lane, to A. Bunn; Jefferson st., to George F. Brackett; Garfield ave., to F. J. Marley; Piaget ave., to James A. Sowerbutts; Hazel st., to Philip Kramer; Barbour ave., to G. F. Brackett; East 31st st., to McKiernan & Bergin; Pacific st., to James S. Sowerbutts; Beech st., to Philip Kramer; repairing Lexington ave. with tarvia, to G. F. Brackett; repairing Market st. with G. F. B. compound, to G. F. Brackett; resurfacing Long Hill road with texaco, to G. F. Brackett; resurfacing Cedar Cliff road with Headly compound, to Wayne Construction Co.; filling in holes with stone clay binder and screenings on Stone House Plains road, to F. J. Marley; same on Clifton ave., to Jas. S. Sowerbutts, and same on River road, to G. F. Brackett.

Newark, N. J.—Brick paving, to Newark Paving Co., Rose st., \$7,058.80; South 16th st., \$17,806; Johnson ave., \$8,291.60; Runyon st., \$13,224.80; Watson ave., \$7,430.20. J. F. Shanley Co., two granite block contracts as follows: Rose st., from Bergen to Kipp st., \$10,994.50; Chestnut st., from Pacific st. to Elm rd., \$39,878; brick paving contracts, to Jersey Paving Corporation, as follows: North 7th st., from Bloomfield ave. to Chester ave., \$15,680; North 6th st., from Bloomfield ave. to Heller parkway, \$38,660; Delavan ave., \$5,161; to Van Keuren & Son, paving on D'Auria st. with brick, \$3,870; and Watson ave. with granite block, for \$21,094.

Albany, N. Y.—Paving, Schuyler st., to I. M. Holler, \$3,720.

Syracuse, N. Y.—Street improvements: to Frank S. Sposito, grading Clifton Place, \$3,378.30, and Comstock place, \$1,909.25 to Ernest Woods, Paul ave., \$2,069.

Elyria, O.—Road improvements, to Rice & Son, the Cowley road, 2.66 miles, Eaton Township, \$14,204; Case road, 2.51 miles, in Ridgeville Township, \$13,146; Indian Hollow road, 2.09 miles, in Carlisle Township, sandstone base donated, \$8,824; Chestnut Ridge road, 4.06 miles, in Carlisle, Eaton and Ridgeville Townships, \$22,557; to S. Mendelson, Stoney Ridge road, .68 mile, in Ridgeville Township, \$33,077; West River road, 3 miles, in Elyria Township, \$16,924; Sugar Ridge road, 1.09 miles, in Elyria Township, \$7,761.

SEWERAGE

Oroville, Cal.—P. A. Haviland, Alameda, will prepare plans for construction of proposed sewer system.—E. J. Mitchell, City Clerk.

Winchester, Ky.—City will not construct proposed sewerage system this year; bond issue sale called off.

Hancock, Mich.—Council has decided to install more sewerage at north end of village.

O'Neill, Neb.—Citizens have voted \$16,000 bonds for sewerage system.

Jersey City, N. J.—Tax Commissioner John Cross, of Hoboken, desires appropriation to cover cost of laying proper sewer in 1st st.

Dunkirk, N. Y.—Council has rejected all bids for building sewers in Courtney st. and Railroad ave.; new bids will be asked.

North Elba, N. Y.—State Senate has passed a bill authorizing \$6,000 bond issue for sewer system.

Hubbard, O.—Engineers will be employed to design sewer and water system for village.—W. S. Bond, Chairman Special Committee.

CONTRACTS AWARDED

Mishawaka, Ind.—Sewer contracts, three streets, to L. H. Webster.

Baltimore, Md.—Sanitary Contract No. 50, Jones' Falls Interceptor, Sec. No. 2, to United Engineering and Construction Co., Baltimore, \$33,835; work consists of following approximate quantities: 10,000 cu. yds. earth excavation in trench, 300 cu. yds. earth excavation in tunnel, 150 cu. yds. rock excavation, 650 cu. yds. embankment, 240 lin. ft. 24-in. diameter c.-i. pipe sewer, 375 cu. yds. brick masonry, 4,200 cu. yds. concrete masonry, 145,000 lbs. reinforced steel, 16,000 lbs. structural steel, 150 M. ft. ordinary sheeting, shoring and bracing.—Calvin W. Hendrick, Chief Engineer Sewer Commission.

Paterson, N. J.—Lakeview sewer, to Wormser-Goodman Co., New York, \$34,700.70. Other bidders: McKiernan & Bergin, city, \$36,561.38; Hudson Terminal Construction Co., New York, \$37,220.40; Union Building and Construction Co., New York, \$42,614.60; G. F. Brackett, New York, \$48,418.50; Charles Ippolito, New York, \$45,401.40; Joseph Puglia, city, \$50,595.20; T. M. McLeod, city, \$58,268.50; Fusco Construction Co., New York, \$72,740.50.

Binghamton, N. Y.—Sewers, James and 2d sts., to T. B. Bidwell, \$3,190.86 and \$685.60.

Niagara Falls, N. Y.—Sewer in Calumet ave., to Cusano & Dower, \$17,892.

Syracuse, N. Y.—Pipe sewers, 12-in., Raynor and other streets to Philip Thomas, \$2,287.35.

Cincinnati, O.—Sewer Eden ave. to Douglass Plumbing & Heating Co., \$3,073.

Richmond, Va.—Trunk sewer, to Maynard & Ford.

WATER SUPPLY

Black Diamond, Cal.—Construction of municipal water works and electric light plant is being considered.

Denver, Col.—Citizens have defeated proposition to grant franchise to Denver Water Co.

Port Tampa, Fla.—City desires estimates on standpipes 100 ft. high; also on 9,500 ft. 6-in. pipe. Address A. B. Carey.

Bangor, Me.—Water Board has asked for appropriation for building filter plant and clear water basin at water works.

Gloucester, Mass.—Board of Water Commissioners will expend \$1,000 for extension of mains on Wheeler st.

Marshall, Mich.—Electric Light and Water Commissioners have asked \$7,000 appropriation for fire hydrants and street lighting.

Cloquet, Minn.—Citizens have voted \$40,000 to extend water system.

Niagara Falls, N. Y.—Water Commission has instructed Engineer to prepare plans for proposed extension of intake for new water supply system to Canadian channel.

Saranac Lake, N. Y.—Citizens have voted \$28,000 bonds for water mains.

Hubbard, O.—Engineer will be employed to design water and sewer system for village.—W. S. Bond, Chairman Special Committee.

Park City, Utah.—City has sold \$50,000 water bonds to Central Bank and Trust Co.

Provo City, Utah.—L. C. Kelsey, 402 Dooly Bldg., Salt Lake City, has been selected as Engineer for water works system; cost \$90,000.

CONTRACTS AWARDED

New Britain, Conn.—Laying 14,000 ft. 14-in., 16-in. and 20-in. pipe, to Bernardino Silvestri & Conti, Hartford, \$7,989.60; reservoir, to P. Guzzio & Co., city, \$20,287.56.—P. J. Egan, Chairman Water Works Committee.

New Bedford, Mass.—Furnishing about 75 tons of high grade "Omalia" brand pig lead, to Chadwick-Boston Lead Co., \$89.85 per ton; furnishing 80 bales of best quality soft jute packing, to H. L. Bond & Co., Boston, 12 strand dry jute, 4.15c. per lb.

Mt. Jackson, Va.—Constructing reservoir to Kniersley Bros., Woodstock.

BIDS RECEIVED

Norwood, O.—Construction of two more wells, additional pumps, gas engines and generators for wells, Joseph Koehne, \$2,400; Tressler Co., \$2,250; pumps, Allis-Chalmers Co., \$12,000; Laird-Lawn-Gordon Co., \$7,635 and \$7,590; McGowan Co., \$7,035; generators, 11 different bids, that of the Joentz & Leist Co., \$3,000, being lowest, and others ranging up to \$3,772; for the gas engines the Columbia Machinery Co., \$8,351; Foss Co., \$9,000; Buckeye Co., \$9,100; Struthers, Wells Co., \$9,728; Bruce Macbeth Co., \$10,554; E. A. Kinney Co., \$11,940; Bessemer Co., \$7,800; Kensey Co. submitted combined bid of \$14,950 for gas engines and generators.

LIGHTING AND POWER

Sebastopol, Cal.—Russian River Light and Power Co. has petitioned Trustees for franchise to connect substation of Pacific Gas and Electric Co. in this city with line recently built.—J. E. Bennett, President.

Washington, D. C.—Capital Traction Co., 36th and M sts. N. W., has purchased water front property on Water st. and will erect power house.

Crawfordsville, Ind.—Citizens have authorized installation of municipal electric light plant at cost of \$85,000.

Cynthiana, Ind.—Wm. Espenschied, Mt. Vernon, has been employed to draw up franchise, contract, etc., for electric light plant.

Marshall, Mich.—Electric Light and Water Commissioners have asked \$7,000 appropriation for street lighting and fire hydrants.

Grand Rapids, Minn.—Edw. P. Burch, Minneapolis, has estimated cost of developing Prairie River Falls for municipal use at electric light and water plant at \$100,000.

Ventnor, N. J.—Council is considering installation of municipal electric lighting plant.—Councilman Carson, Chairman Special Committee.

Allentown, Pa.—Residents are urging bonding of borough to provide municipal lighting.

Philadelphia, Pa.—The Philadelphia Electric Co., 10th and Chestnut sts., has decided to construct a power plant on Randid st.—A. J. De Camp, Manager.

Provo City, Utah.—L. C. Kelsey, 402 Dooly Bldg., Salt Lake City, has been selected as Engineer for proposed hydroelectric plant; cost \$110,000.

Portsmouth, Va.—Seventh Ward Improvement Board has asked for \$2,000 for lights during year, including proposed additional lights.

Spokane, Wash.—To insure uninterrupted electric lighting service in business district Washington Water Power Co. has completed plans for installation of two huge storage batteries.

Ironwood, Wis.—Citizens will vote on granting franchise to Ashland Lighting Co.; company proposes to develop Copper Falls and transmit power to both Ashland and Ironwood.—A. E. Appleyard, President.

CONTRACT AWARDED

South Bend, Ind.—Furnishing and installing 300-h.p. alternating current motors, Fairbanks, Morse Co., Chicago, \$6,097; Westinghouse Electrical Manufacturing Co., Pittsburg, Pa., \$6,903, and General Electric Co., Chicago, \$6,954.

BIDS RECEIVED

Ft. Logan H. Roots, Ark.—Electric lighting system: (a) Constructing transmission, primary secondary service connection; (b) wiring buildings and installing fixtures; (c) furnishing wattmeters and transformers; (d) tungsten street lamps, etc.; (e) constructing substation. F. E. Newberry Electric Co., St. Louis, Mo., a \$9,281, b \$10,279, c \$1,312, d \$1,335, e \$800; General Electric Co., St. Louis, Mo., a \$1,261; Westinghouse Elec. Mfg. Co., Baltimore, Md., c \$1,198, d \$1,486; Southwestern Electric Equipment Co., Little Rock, Ark., b \$4,589; McCay Engineering Co., Baltimore, Md., e \$1,289.

FIRE EQUIPMENT

Sacramento, Cal.—Building and Repair Committee, School Board, is considering installation of electric gongs for fire alarms in school.

Anderson, Ind.—City is considering improvement of fire equipment.

Indianapolis, Ind.—Advisory Commission has recommended erection of six additional fire stations, hospital and training stable, installation of fire alarm telegraph in fireproof building, purchase of universal couplings, establishment of salvage corps and fire patrol, purchase of apparatus consisting of hose wagons, chemical engines, motor engines, aerial trucks, chiefs' bugies and supply wagons.—Chas. E. Coots, Chief.

Independence, Kan.—Plans have been completed for erection of brick fire station at cost of \$2,000.

Winchester, Ky.—J. W. Crone will draw plans for remodeling of old fire department building on Fairfax st.

New Brunswick, N. J.—Fire Department Investigation Committee has recommended erection of two fire houses.

Salem, N. J.—Installation of fire alarm system is being considered by Council.

Yonkers, N. Y.—Public Buildings and Grounds Committee is considering purchase of site for erection of fire hall.

Franklin, Pa.—Chief Engineer Grimm has recommended purchase of auto combination apparatus, storage battery and more fire alarm boxes; also 500 ft. of hose.